MINISTRY OF NATURAL RESOURCES

Napanee District

LAND USE GUIDELINES

Ministry of
Natural
Resources

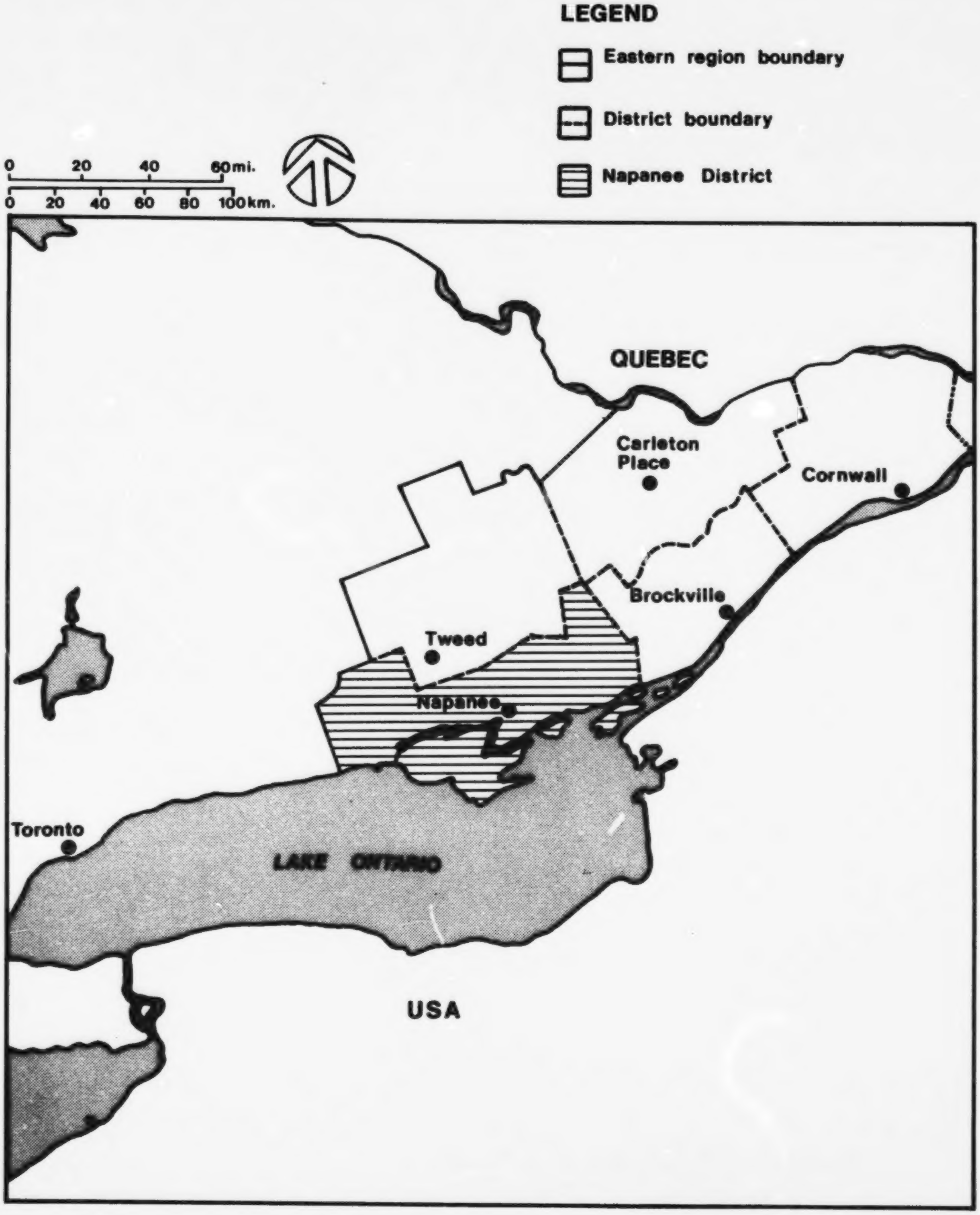
Ontario

Hon. Alan W. Pope
Minister

W. T. Foster
Deputy Minister

1983

REGIONAL SETTING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FOREWORD

The Ministry of Natural Resources has a primary responsibility for the management of the province's natural resources, in particular those related to resource development and outdoor recreation.

This document will serve as a design for integrating ministry programs in the *Napanee District*. It is also intended to provide others with an understanding of the ministry's mandate and its programs which rely on both Crown and private lands for success.

To ensure an integrated approach to the management of natural resources the *Napanee District Land Use Guidelines* identify where and in what manner the ministry may use Crown land, and to what extent it may wish to suggest uses of private land in working towards the achievement of ministry objectives.

For Crown land the ministry must consider the land and water requirements of both its own programs and those of other government agencies. This will require ongoing liaison with these other agencies. The ministry will continue to consult with private landowners and local municipalities since the latter have the responsibility for control of private land use.

The program targets and approaches outlined in this document follow the overall direction set out in the ministry's *Southern Ontario Coordinated Program Strategy*. This document may serve as one of the sources of information for ministry involvement in the planning process of municipalities and other agencies. It is recognized, however, that this document has no legal status.

Planning is a continuous process and must be responsive to changing needs, information and technology. Thus the targets and strategies presented in this document are subject to revision based on such factors as changes in government policy, new or refined resource information and significant changes to land use in other planning documents. To accommodate changes the *Land Use Guidelines* will normally be reviewed every ten years and will involve full public consultation.

Comments may be addressed to the District Manager at any time.

Regional Director
Eastern Region

District Manager
Napanee District

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I INTRODUCTION

It is the primary responsibility of the Ministry of Natural Resources to manage the public lands and waters which make up 45 percent of southern Ontario. The ministry also participates with other government agencies, private interests and municipalities in the planning and use of private lands and waters.

The goal of the ministry is to provide opportunities for resource development and outdoor recreation for the continuous economic and social benefit of the people of Ontario and to manage, protect and conserve public lands and waters.

Effort is directed towards this goal through three broad programs. The resource production program stimulates and regulates the utilization of fish, fur-bearers, minerals and trees by resource industries. The outdoor recreation program provides and encourages a wide variety of recreational opportunities, the identification and conservation of certain unique or representative features of the province and a continuous economic contribution from the tourism industries. The land and water management program serves to facilitate orderly development, to administer, protect and conserve public lands and waters and to further the safe, coordinated use of all lands.

The Ministry of Natural Resources seeks to meet its goal and objectives through a coordinated, decentralized corporate planning and management system. One of the components, the land use planning system, provides the many diverse land and water related programs of the ministry with the framework for long-term integrated resource management by defining Crown land and water resources to achieve overall government objectives and by identifying private land contributions to achieve ministry objectives. This framework is expressed at two levels; in the strategic land use documents prepared for northwestern, northeastern, and southern Ontario planning regions and, in subsequent district land use guidelines.

The *Southern Ontario Co-ordinated Program Strategy* interprets the key elements of approved ministry policy statements in a coordinated fashion for the southern Ontario planning region. Each district is required to produce land use guidelines for the local administrative level.

In southern Ontario, the ministry is decentralized both geographically and administratively to four regions (Southwestern, Central, Eastern and Algonquin) and twenty-one districts, and functionally by management programs, mineral resources, forestry, fisheries, wildlife, provincial parks, lands and various specialized services.

The Napanee District is one of five administrative units in the Eastern Region responsible for the attainment of ministry program targets (frontispiece). The district covers an area of 1,054,092 hectares (4,070 square miles). There are fifty municipalities within the district, including southern portions of the counties of Frontenac, Lennox and Addington and Hastings, the eastern section of Northumberland County, and all of Prince Edward County. The district is bounded to the north by the Tweed District, to the east by the Brockville District, to the south by Lake Ontario and the St. Lawrence River, and to the west by Lindsay District in the Central Region. The major urban centres in the district are the cities of Kingston, Belleville and Trenton, with 1980 populations of 61,217, 35,102 and 14,289, respectively.

The ministry directly manages the Crown lands and waters and agreement forest lands which together comprise about 46 percent of the Napanee District. This includes the Canadian portion of Lake Ontario which is 40 percent of the total area of the district. In addition, the district works closely with the St. Lawrence Parks Commission, and seven conservation authorities (Cataraqui Region, Prince Edward Region, Lower Trent Region, Crowe Valley, Napanee Region, Moira River, Rideau Valley) to ensure that their programs contribute to the achievement of ministry objectives wherever possible. Nevertheless, the essential fact is that the district targets must be achieved largely on private land in organized municipalities. Major effort will be directed to encouraging a continuous contribution from private land to the achievement of ministry objectives. This will involve the provision of direct forms of encouragement to landowners and continued liaison and co-operation with municipalities which have responsibilities for controlling land use on private land under the authority of the *Planning Act.*

This document, the *Napanee District Land Use Guidelines*, has been prepared in accordance with Ministry of Natural Resources provincial and regional guidelines for land use planning and in conformity with the direction provided by the *Southern Ontario Co-ordinated Program Strategy.*

The *Land Use Guidelines* states ministry policy for the administrative district including objectives, targets and strategies and provides assistance for co-ordinating and integrating the land and water related programs of the ministry. It indicates what the ministry plans to achieve, and how much, when, where and how it wishes to accomplish this within the Napanee District. This document is best viewed as a working guideline which will be subject to considerable review and re-evaluation as the ministry proceeds with application.

Prediction of the future is uncertain at best and impractical for some resource uses. However, the use of targets provides a measurable indication of the degree of achievement of certain ministry program policies. It is not intended that all targets be achieved immediately but rather over the next 20 to 40 years. Periodic reviews will maintain the long-term perspective. Nevertheless, the achievement of the stated targets may be affected by a number of factors including the validity of the original assumptions, legislative approval of necessary funding and staffing levels, changing economic and social conditions, new or improved inventory and information which could result in a change to the original estimates and improved analysis techniques.

Program targets were initially allocated among the five districts in the Eastern Region from regional targets assigned in the *Southern Ontario Co-ordinated Program Strategy.* Each district then made an evaluation of whether or not the assigned targets were achievable. This involved examining factors such as current resource production, major constraints and the land area potentially available to each program. Some targets have been adjusted to reflect this review.

This document is designed primarily for use by ministry staff when managing the natural resources of the district, and when providing information and comments for the plans of municipalities, conservation authorities, other agencies and private landowners. Care must be taken that no one policy area is interpreted without regard for the others when applying the *Land Use Guidelines.*

In developing land use guidelines for Napanee District a number of background papers were prepared. In addition, a tabloid was widely distributed in November 1980, to provide an introduction to the land use planning activities of the ministry. It presented brief highlights of the ministry's present natural resource programs in the Eastern Region and invited individuals and groups to become involved in the land use planning process for natural resource use now and in the future. During January through March 1981, the district land use planning program was widely publicized in newspapers and on radio and at three public open houses in Kingston, Belleville and Napanee. In addition, a general meeting was convened for associated resource management agencies and presentations were made before the councils and/or planning committees of the counties and other selected municipalities.

These actions contributed to the preparation of a draft *Napanee District Land Use Strategy* in June 1982. This document was circulated during the summer months and provided a focus for four public open houses in Belleville/Trenton, Kingston, Napanee and Picton. The document was revised based upon verbal and written comments received at the open houses, meetings with interested groups including municipalities and conservation authorities and the contents of written briefs and letters. Copies of all comments received are available for viewing in the Napanee District office, in the ministry's main office public reading room and in the Legislative Library at Queen's Park, Toronto.

This introductory section outlines briefly the scope of the Ministry of Natural Resources mandate, provides the context for planning within the ministry, and describes the Napanee District and how land use planning has been applied to the area. The General Policies and Specific Policies sections of the report state the objectives and targets applying to the Napanee District and discuss the management challenges and opportunities that exist. These sections also describe the broad strategies for achieving the objectives and targets. The next section, General Resource Areas, describes present use and development, any special features, and current land use problems and issues for specific locations in the district, and indicates which ministry programs will operate and the relevant strategies and important relationships that apply. The Application section describes, in general terms, how district staff will carry out the developed land use guidelines. An Appendix highlights the public consultation programs followed during the district land use planning process. A Glossary also is provided.

The policies outlined in this section will be practised or supported by each program of the ministry in the district. These policies do not necessarily apply to any one program more than another and are not specific to any one land area.

A: integrated resource management

1. POLICY STATEMENT

Programs will be integrated to ensure the efficient use of land and water to achieve ministry objectives.

2. DISCUSSION

The area of land and water in the district suitable and available for achievement of ministry objectives is limited, and as a result, many activities must be carried out in the same area.

Of the total land area of Napanee District, approximately 96 percent is in private ownership (map 1). The remaining 4 percent is in public ownership which includes Crown, conservation authority, agreement forest, parks commission and federal lands. Only about two-thirds of this public land area is under the direct control of the Ministry of Natural Resources. Therefore, a significant portion of ministry program objectives must be achieved through encouraging use of the private land.

Public land and water management involves the stewardship of the basic resources of land and water. Approximately 87 percent of the land in the province belongs to the Crown and is managed for the benefit of the people of Ontario. For the rest of the province which is in private ownership, the public's interest is more limited; it exists nevertheless and must be recognized. The integrated resource management policy for the Napanee District will have particular emphasis on public lands for all ministry programs. Where individual programs require the use of private land or may affect adjacent land, ministry resource management will be co-ordinated with other land uses such as agriculture and residential development so that conflicts and inefficiencies are avoided or minimized. It is anticipated that greater cross-program efficiencies may be achieved through integration of activities on lands now managed by the ministry.

Many agencies at the federal, provincial, regional and local levels of government have an interest in the planning and management of land and water resources. Therefore, co-ordination is required among agencies as well as within the Ministry of Natural Resources. This is particularly evident in water management which can be generally described under the categories of water quality management, water quantity management and water related land management.

Water quality management in Ontario falls principally under the jurisdiction of the Ministry of the Environment through its administrative responsibility for the *Ontario Water Resources Act* and the *Environmental Protection Act*. The Ministry of Natural Resources has a primary concern for water quality as it pertains to fish habitat management and water-oriented recreation.

The Ministry of Natural Resources is involved in water quantity management in several ways. The ministry has been assigned responsibility for provincial response to flood emergencies. The ministry also regulates the construction and operation of dams and other works under the *Lakes and Rivers Improvement Act*. In addition, several sections of the *Fisheries Act* (Canada) and boating regulations under the *Canada Shipping Act* (Canada), both administered by the Ministry of Natural Resources, apply to water quantity management.

Water conservation and flood control in Ontario have been delegated and decentralized to the watershed level where conservation authorities have been established, therefore, conservation authorities play an active role in water quantity management in much of southern Ontario. In areas not under conservation authority jurisdiction, such as Howe, Wolfe and Amherst Islands, the Ministry of Natural Resources must assume this responsibility. The *Napanee District Land Use Guidelines* will therefore contain references to water management and the activities of existing conservation authorities in order to foster an integrated and consistent approach to resources management across the entire district.

The Ministry of Natural Resources plays an important role in regulating floodplain development and managing water related land resources such as wildlife, parks and forests. Conservation authorities, under the *Conservation Authorities Act*, are given specific powers on water related land management. They have the right to acquire and manage lands to meet their objectives, including recreational purposes. As an integral part of conservation authorities' flood and erosion control programs, effective land management is used and encouraged to reduce or eliminate negative impacts of land use decisions on water management.

It is anticipated that conservation authorities, through their watershed or basin studies and plan review function, will continue to take an active role in storm water management, municipal drainage, soil conservation and review of proposed land uses which may change the quality and quantity of water resources.

The ministry acknowledges that the planning authority in organized municipalities rests primarily with the local council. The *Land Use Guidelines*, however, outline many of the ministry's preferences for land use and resource management on private land and provide a framework for decision making within the ministry.

3. STRATEGY

- apply the concept of multiple use to land and water management, that is,
  - normally undertake two or more compatible activities on the same major area, concurrently or sequentially over time, and
  - recognize that, in some circumstances, management of areas for single purposes such as extraction, protection or recreation is necessary;
- ensure that individual area management plans, including water management plans, consider as many ministry objectives as possible to foster integrated management and increased efficiency;
- consider all resource benefits when developing management plans and, where feasible, prepare resource management plans which will achieve the objectives of two or more programs; the various resource management specialists in the district will consult with one another to develop proposals or plans;
- obtain co-ordinated comment from all program areas that may be affected by application of proposals for land-using activities;
- identify primary resource areas on both public and private land and promote designation of such areas in municipal and ministry plans to discourage non-compatible uses;
- provide effective and comprehensive extension services dealing with activities of the ministry requiring private land. Details of these programs are found in the respective sections;
- liaise with local conservation authorities on matters of mutual concern such as development proposals in, or adjacent to hazard lands and environmental protection areas;
- communicate effectively with municipal, provincial and federal agencies to ensure that the policies, programs and actions of these groups and those of the ministry are supportive and complementary; the ministry will

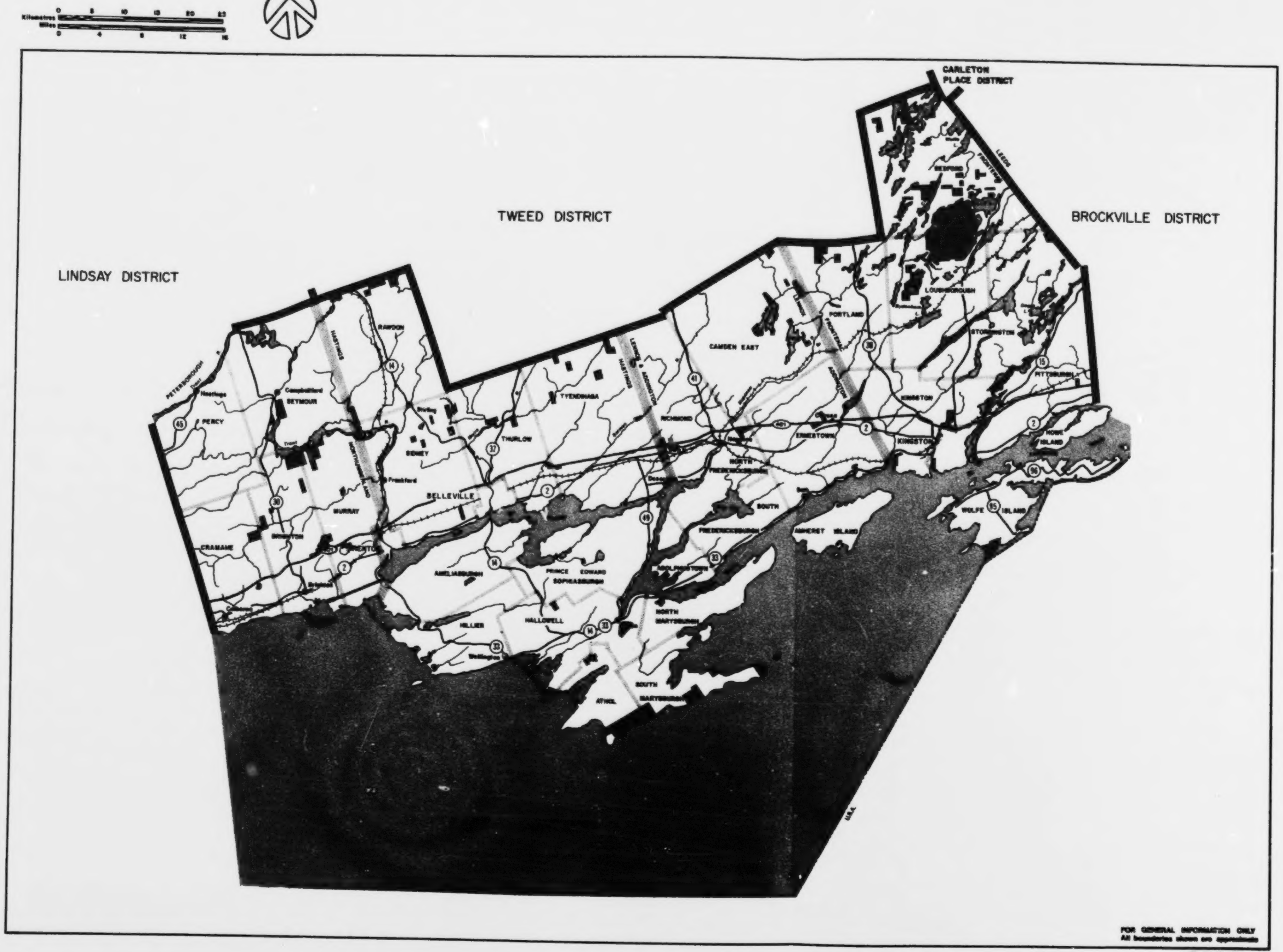
NAPANEE DISTRICT

LAND OWNERSHIP

LEGEND

☐ Private land

■ Public land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LINDSAY DISTRICT
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SEYMOUR
PERCY
SIDNEY
THURLOW
TYENDINAGA
RICHMOND
CAMDEN EAST
PORTLAND
BEDFORD
LOUGHBOROUGH
STORRINGTON
PITTSBURGH
KINGSTON
ERNESTOWN
NORTH FREDERICKSBURGH
SOUTH FREDERICKSBURGH
AMHERST ISLAND
WOLFE ISLAND
HOWE ISLAND
BELLEVILLE
Frankford
MURRAY
CRAMAHE
BRIGHTON
AMELIASBURGH
PRINCE EDWARD
SOPHIASBURGH
ADOLPHUSTOWN
NORTH MARYSBURGH
SOUTH MARYSBURGH
HALLOWELL
HILLIER
ATHOL
Wellington
U.S.A.
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38
15
401
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FOR GENERAL INFORMATION ONLY
All boundaries shown are approximate

MAP 1

liaise with those resource agencies which have jurisdiction within Napanee District; and

- permit interim use of candidate parks providing park values are protected. Uses and facilities which complement the achievement of park objectives will be encouraged; uses which have no significant negative impact on the long-term achievement of park objectives will be permitted with judicious controls; and uses which would conflict with the long-term achievement of park objectives will be prohibited.

B: public safety

1. POLICY STATEMENTS

The ministry will seek to eliminate loss of life and to minimize property damage and community disruption resulting from floods, erosion, earth slippage and forest fires.

The ministry will seek to eliminate injury and loss of life from hazards around abandoned pits, quarries and mine shafts and from abandoned oil and gas wells.

The ministry will promote the safe pursuit of outdoor recreation and resource production activities.

2. DISCUSSION

The *Napanee District Flood Contingency Plan* has been prepared to assist in the achievement of the public safety policy. The objectives of the plan are to identify human and material resources available to respond to a declared flood emergency and to provide for delivery of ministry resources to respond to a perceived escalating flood occurrence prior to declaration of a flood emergency.

The regulatory flood for designation of floodplains is defined as the regional flood or the 100-year flood, whichever is greater over the Lower Trent Region and Prince Edward Region Conservation Authorities. In the remainder of the district the 100-year flood is the standard which applies. Conservation authorities in the Napanee District have adopted or are in the process of adopting, where possible, detailed programs, policies and operational criteria to apply more precisely the provincial standards to local conditions. For erosion susceptible sites, 100 years of protection is the provincial standard.

Forest fire management is an integral part of land and resource management. Forest fire management is the strategy of fire control and fire use practised in concert with land use objectives and conducted in a manner that considers environmental, social and economic criteria.

The fire management program of the ministry performs a support function that provides expert knowledge and specialized services in matters of fire control and fire use to groups within and outside the ministry. Those services relate to preventing the occurrence of wildfires, controlling those wildfires that threaten values, and using prescribed fire as an approved resource management technique.

The Ministry of Natural Resources has responsibility for forest fire management in Ontario. This responsibility is shared with municipalities and with landowners and resource users.

Delivery of fire protection services is best carried out by municipal agencies where they have that capability. The ministry can play a significant role in developing municipal expertise in minimizing risks from forest fires and in fire and emergency planning.

The control of forest fires in the Napanee District is primarily the responsibility of municipal fire brigades, which effectively cover the entire district area. Bedford Township is the only municipality in the Napanee District which is within the fire region, as designated under the *Forest Fires Prevention Act*, and is under the forest fire control jurisdiction of the Tweed District.

Close co-operation with conservation authorities and municipalities will be necessary to achieve the public safety objectives.

3. STRATEGY

- discourage new development in areas susceptible to flooding, erosion and earth slippage, or permit development only with adequate protection and safeguards;
- participate in emergency contingency planning for floods of provincial significance and update, annually, the *Napanee District Flood Contingency Plan*;
- act as the lead agency for response to provincially significant flood emergencies;
- assist the Tweed District suppress forest fires in Bedford Township;
- in conjunction with the Ministry of Labour, ensure adequate safety measures are provided at abandoned pits, quarries and mines; and
- promote the hunter safety and education program by offering training for instructors, and by providing competent examiners and facilities for examinations.

C: environment

1. POLICY STATEMENT

The ministry will conduct its activities in an environmentally responsible manner.

2. DISCUSSION

The Ministry of Natural Resources is one of several provincial agencies which have legislative responsibility to maintain an acceptable environmental quality. Planning therefore is required to co-ordinate specific resource management activities with the various other agencies.

Achievement of ministry targets is contingent upon a great many factors, not the least of which is the maintenance of a suitable environment. Of particular concern is the potential effect of acid precipitation on waterbodies, soil and vegetation. The ministry will work closely with other government agencies to monitor the effect of contaminants such as acid rain on the achievement of its objectives.

All programs of the ministry share in the responsible management of natural resources. This includes identifying and conserving unique, representative or endangered physical, biological, cultural and historical features of the province. Biologically sound management is a basic requirement of forest, wildlife and fisheries management.

The management of non-renewable resources includes both protecting them from incompatible land use activities and discouraging use of high quality materials where lower quality materials would be suitable. Where environmental impacts are inevitable, mitigating and rehabilitation measures are used.

Some resource management activities carried out by the ministry are subject to the *Environmental Assessment Act*.

3. STRATEGY

- manage renewable resources on a biologically sound basis;
- manage non-renewable resources to meet current demands, giving attention to anticipated future needs. This will include encouraging recycling and discouraging the use of high quality materials where lower quality materials would suffice;

- in conjunction with conservation authorities, manage and regulate watersheds including groundwater recharge and source areas, valley lands and waterfront areas;
- encourage consideration of all wetland values in municipal planning and the planning of other agencies. The ministry will be issuing a wetlands policy in the near future;
- identify and protect the habitat of provincially rare and endangered animals and plants;
- monitor the effects of contaminants, including acid rain, on natural resources by such means as continuing to work closely with the Ministry of the Environment to study possible changes in water quality of lakes which may be detrimental to fish and other species; and
- implement procedures to meet the requirements of the *Environmental Assessment Act*.

D: energy

1. POLICY STATEMENT

The ministry will undertake its activities so as to contribute to provincial energy objectives.

2. DISCUSSION

The province is committed to a major effort to increase its capacity for energy self-sufficiency. The Ministry of Natural Resources is currently assisting in achieving provincial energy objectives by increasing energy efficiency and conservation, participating in resource inventory programs and participating in energy recovery programs.

The Napanee District has an active Crown lands fuelwood program for home heating. However, it is felt that fuelwood will, in the foreseeable future, constitute a relatively small contribution to the provincial energy objectives.

3. STRATEGY

- continue to promote the Crown lands fuelwood program for home heating;
- study the opportunities for ministry involvement in the development and supply of alternative energy sources. For example, it may be feasible to heat provincial parks offices with solar energy; and
- review proposals for peat extraction both on private and Crown land on an individual basis.

A: forestry

1. OBJECTIVE

The objective for forestry in southern Ontario is to provide for an optimum contribution to the economy by forest-based industries consistent with sound environmental practices and to provide for other uses of the forest.

2. TARGETS

The targets for forestry in Napanee District are:(1)

- to produce an annual continuous supply of 85,000 cubic metres (3.0 million cubic feet) of wood for industrial purposes by the year 2020 while maintaining the present diversity of forest products; and
- to make the maximum contribution from forest production to the achievement of the provincial energy target.

3. DISCUSSION

In recent years, the annual wood harvest has averaged approximately 85,000 cubic metres (3.0 million cubic feet), showing an average of 62 percent in level of utilization. This reflects the lack of nearby markets for low grade hardwoods and conifers, particularly in the 10 to 25 centimetre (4 to 10 inch) diameter breast height classes. The twenty-eight mill operations licensed in the district for 1978 provided an estimated 208 jobs and therefore are considered a minor source of employment. In total, these operations produced a total of 47,850 cubic metres (6.6 million board feet) of lumber; three-quarters of this volume came from private lands within the district and the balance from outside the district. Two major sawmills located at Campbellford and Roslin account for 34,800 cubic metres (4.8 million board feet) per annum. The Domtar pulpmill at Trenton receives one-fifth of its total demand of pulpwood, 113,300 cubic metres (4.0 million cubic feet), from patented land in the district and the remainder from outside the district.

Present levels of timber utilization are less than the allowable cut for the Napanee District. The approximate allowable cut on 93,700 hectares (231,400 acres) of productive forest land has been estimated at 137,100 cubic metres (4.8 million cubic feet). With an average annual growth rate of 3 cubic metres per hectare (43 cubic feet per acre) per annum the gross total annual fibre production is 281,000 cubic metres (9.9 million cubic feet). There are numerous deductions from the gross total production to the probable gross merchantable production because of losses from the growing stock due to fire, insect, disease, and other environmental factors. With the application of more intensive management practices on the forest land base, a gain of up to 30 percent in total wood production is considered possible.

Map 2 outlines, on a broad scale, the area that is currently forested and also the area which is most adapted to reforestation by virtue of the absence of competing land uses. This does not preclude the achievement of timber targets on the land outside this area. In fact, some of the most productive woodlots are found on the rich agricultural lands outside the area. The district will aim to achieve its targets on lands of high and medium capability wherever this is compatible with other land uses.

Crown lands and agreement forests (conservation authority and township) exclusive of provincial parks total about 6,600 hectares (16,300 acres), about half of which is considered productive forest land. This is equivalent to about 3.5 percent of the total productive forest in the dis-

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(1) All volumes of wood are expressed in net merchantable terms.

trict. As a result, the wood production from Crown land and agreement forests will not significantly contribute to the achievement of the district wood production target. Over 96 percent of the land estimated to be available for wood production is in private ownership and supports a greater diversity of tree species than Crown lands.

Areas of very low capability for forestry (e.g. shallow soil, adverse terrain, excess moisture) are often classified as protection forest. These areas are not included in the allowable cut and will be given a lower priority in the forestry program and will provide little, if any, contribution to the district wood production target. It is not intended that forest management and its ensuing benefits be ignored in these areas, but rather that wood production efforts will be focused on the high capability areas.

Existing and proposed urban areas, established parks, Indian lands and cleared lands of agricultural capability classes 1, 2 and 3 will not be required for obtaining the district wood production target.

There is very little control over the harvesting practices of private logging contractors. Poor logging practices which threaten to degrade the quality of the forests in the district may be minimized by a public education effort.

The lack of local markets for small diameter softwood material make it difficult to have coniferous plantations thinned. Properly timed thinnings improve the future supply of larger diameter softwood material which is in great demand.

Municipal official plans provide an opportunity to express locally the need for preserving existing forest lands and reforesting lands that are unsuitable for agriculture. The district can work with municipalities to ensure these plans and the implementing by-laws express forestry concerns.

Tree cutting by-laws restricting and regulating the destruction of trees can be passed by municipalities subject to approval by the Minister of Natural Resources under the *Trees Act.* If enforced, such by-laws can be useful in preventing wholesale destruction of forests and promoting good forest management. Northumberland, Hastings and Lennox and Addington counties currently have by-laws, but these are not being enforced and many people are unaware of their existence.

In addition to industrial uses, forests provide substantial other benefits including watershed protection, erosion reduction, the production of fuelwood and maple syrup, the provision of wildlife habitat and the opportunity for outdoor recreation. Application of the general policy for integrated resource management will ensure that all uses of the forest, though not explicitly stated in this section, will be considered to the extent possible.

It is estimated that at present about 57,000 cubic metres (2 million cubic feet) of fuelwood is cut annually. The demand for fuelwood is increasing rapidly and it is difficult to predict the amount which will be cut each year. An assessment will have to be made to determine how much fuelwood the district is able to supply towards meeting this growing demand. The target will have to be modified in the future to include fuelwood.

In view of the importance of private land, the achievement of industrial wood production targets and other values, the district forest strategy will be aimed at the management of private lands. It will include forest renewal and improvement.

4. STRATEGY

- enter into agreements with private landowners under the *Woodlands Improvement Act* for plantation establishment and woodlot management. Effort will be concentrated in areas most suited to forestry. Within suitable areas, preference will be given to sites four hectares (ten acres) or more, although the minimum area shall be two hectares (five acres). Applications for agreements will be handled within budget and staff limitations and dependent on the availability of suitable nursery stock. All proposed planting areas will be subject to prior agreement by the appropriate county agricultural representative;
- conduct a district forestry services program on a demand basis to deal with requests from the general public for forestry advice. Up to four man-days free service may be provided annually per landowner. The services will include:
  - property inspections to assess the general suitability of land for forestry purposes,
  - planting plans for lands to be reforested by the landowner,

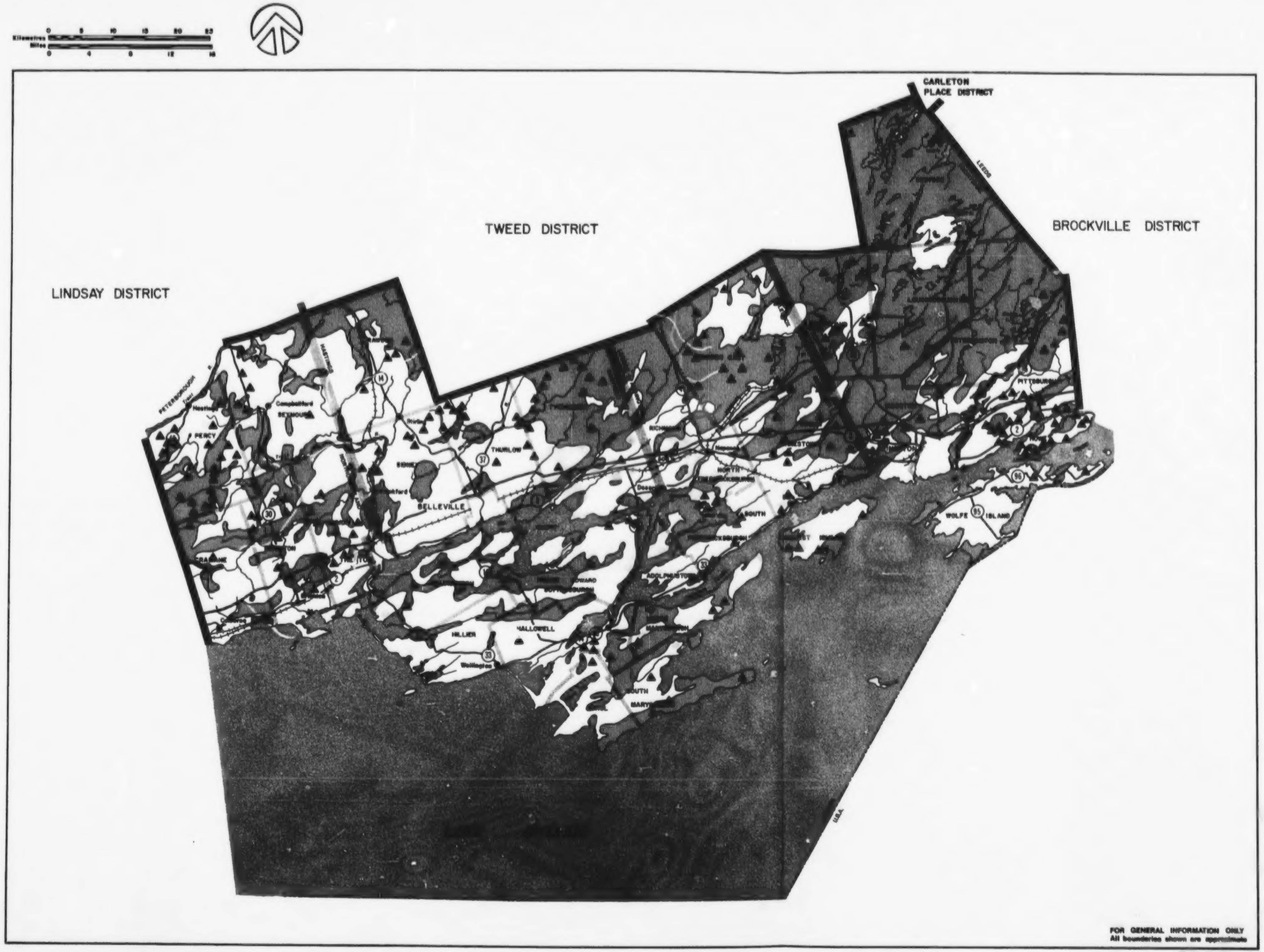
NAPANEE DISTRICT

FORESTRY

LEGEND

■ Forest resource area

▲ Woodlands Improvement Act agreement area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TWEED DISTRICT
BROCKVILLE DISTRICT
LINDSAY DISTRICT
PETERBOROUGH
Hastings
PERCY
Campbellford
SEYMOUR
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THURLOW
37
SIDNEY
BELLEVILLE
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RICHMOND
NORTH
SOUTH
PITTSBURGH
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WOLFE ISLAND
95
ADOLPHUSTOWN
33
HILLIER
HALLOWELL
33
Wellington
SOUTH MARYSBURGH
U.S.A.

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All boundaries shown are approximate

MAP 2

  - basic woodlot management plans and tree marking for commercial harvest or stand improvement with volume estimates if required,
  - advice regarding wood markets, buyers, custom sawmills and prices,
  - technical advice regarding establishment and maintenance of Christmas tree plantations and stands for maple syrup production, and
  - technical advice on insect and disease problems in urban and rural areas;
- carry out public education and information services on all aspects of forestry to increase general knowledge and awareness of the importance of forests to the economy and in the environment. Effort will be concentrated in areas most suited to forestry. Activities will include attendance at career days and 4-H Forestry Clubs, provision of information to the media, talks to service clubs and other interested groups, and assistance to the Scout movement and the Trees for Canada program;
- carry out the maintenance of forested land (Crown and private), and in particular, the maintenance of wood production and the upgrading of the quality of existing woodlots to ensure the continued achievement of the forestry targets;
- increase forest management efforts in site preparation, reforestation, stand improvement and plantation tending and marketing from year to year to meet the increasing demand for timber and to cope with expected losses in the forest land base due to external factors such as urbanization and land clearing;
- carry out protective measures on Crown lands and agreement forests where insects, disease, fire or other pests threaten high value forest areas and also to promote and encourage the control of such destructive agents threatening high value privately owned forest lands through advisory and co-ordination efforts when appropriate;
- assess as soon as possible what portion of current and anticipated fuelwood demand that can be reasonably met from Crown lands. Where demand exceeds supply, participants in the program will be advised to seek fuelwood from private suppliers;
- liaise with woodlot owners, logging contractors, and the general public in the promotion of fuelwood harvest and sale from private lands;
- encourage the utilization of small diameter and low quality hardwood and softwood timber through a public education program and technical advice;
- liaise with other governments and agencies such as conservation authorities, municipalities and provincial ministries in the promotion of forest programs. This will be achieved through joint meetings, participation on advisory boards and committees and review of other agencies' plans and policies;
- encourage counties and municipalities to enforce existing tree cutting by-laws in the interest of preserving existing forested land and promoting good forest management practices. In addition, municipalities in areas of high and medium capability for forest production which presently are not controlled by tree cutting by-laws will be encouraged to adopt such by-laws;
- in co-operation with the Ministry of Agriculture and Food, encourage maple syrup production in suitable locations; and
- permit recreational activities and provide wildlife habitat on Crown lands managed for forestry purposes. Restrictions on the use of motorized vehicles and hunting activities may be necessary at certain times.

B: mineral aggregate

1. OBJECTIVE

The objective for mineral aggregate production in southern Ontario is to meet anticipated future demand with minimal disturbance to natural and cultural resources and the social environment.

2. TARGET

The target for mineral aggregate production in Napanee District is to ensure a total cumulative supply of 90 million tonnes (100 million tons) for the period 1982-2000.

3. DISCUSSION

Of the total thirty-one townships in the district, eighteen are designated under the *Pits and Quarries Control Act*. The County of Lennox and Addington and portions of Frontenac County are presently excluded from the *Act*.

There are 171 licenced pits and quarries within the areas designated under the *Act*. The average annual production prior to January 1981 of sand, gravel and stone from licenced operations was approximately 5.3 million tonnes (5.8 million tons). The total reserves in existing licenced pits and quarries and reserves in potential areas at this time is unknown.

The majority of the material extracted in the southern portions of the district is from ancient beach deposits of Lake Iroquois. Material excavated from the northern and western portions of the district is generally from ice contact features (eskers, kames) and from the Oak Ridges Moraine.

Sand and gravel deposits found over much of the district, particularly in the western townships, are used in the construction industry. Paleozoic limestone is quarried and crushed for several construction uses such as structural beds for roads, driveways, parking lots, foundations and in the production of portland cement. Currently there are two cement manufacturing plants operating in the district.

Detailed information concerning aggregate locations and its suitability for use is presently being compiled and should be available in preliminary form by 1983. It is already known, however, that some of the higher quality sands and gravels are in short supply in portions of the district.

Since mineral aggregate is a non-renewable resource, demand will eventually surpass available supply. The district aggregate production is solely from private land. Also, the ministry cannot guarantee, from legally existing pits and quarries, continued use or level of production. Therefore, as much of the available resource potential as possible should be maintained for future needs.

The ministry is seeking to identify and maintain the potential of sufficient aggregate to meet the target (taking the difficulties of supply into consideration) and to keep future options open. This does not require designation of the total aggregate resource area specifically for extraction. Other designations can provide for ongoing uses while retaining the option to make use of the aggregate at some time in the future. It would be prudent, however, to generally discourage designations or development on or nearby aggregate reserves such that their future use would be impractical.

High potential resource areas in Hastings and Northumberland Counties are identified on map 3. The potential areas are defined as categories 1, 2 and 3 of the Eastern Region's sand and gravel aggregate classification system. These three categories warrant consideration for protection since together they encompass the quality of materials most in demand for road building and construction applications. Map 3 will be

NAPANEE DISTRICT

MINERALS AND MINERAL AGGREGATE

Kilometres 0 5 10 15 20 25
Miles 0 4 8 12 16

LEGEND

■ Mineral resource area

ce	cement
fel	feldspar
gf	graphite
Fe	iron
Pb	lead
mb	marble
mi	mica
sc	silica

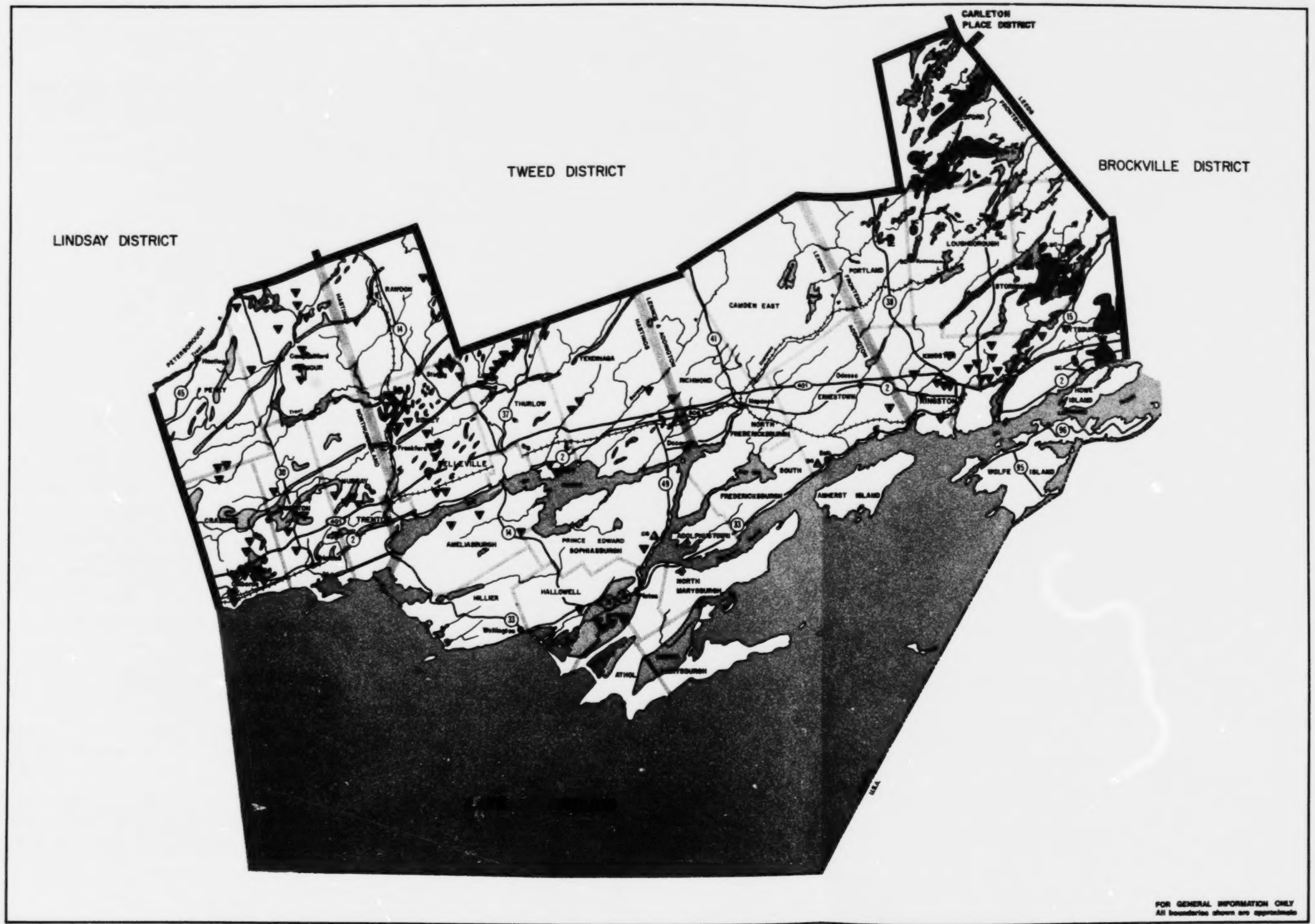
■ Mineral aggregate area (Class 1, 2 and 3 sand and gravel)

▼ Licensed pit or quarry

Note:

1. The aggregate boundaries indicate potential resources not definite extraction sites. Actual production areas to be protected will be determined by each municipality through its official plan policies and by-laws.

2. No aggregate data available for Lennox and Addington and Frontenac counties.



CARLETON PLACE DISTRICT
TWEED DISTRICT
LINDSAY DISTRICT
BROCKVILLE DISTRICT
LEEDS
FRONTENAC
PETERBOROUGH
RAWDON
THURLOW
TYENDINAGA
RICHMOND
CAMDEN EAST
PORTLAND
LOUGHBOROUGH
STORRINGTON
KINGSTON
ERNESTTOWN
NORTH FREDERICKSBURGH
SOUTH FREDERICKSBURGH
AMHERST ISLAND
WOLFE ISLAND
HOWE ISLAND
BELLEVILLE
TRENTON
MURRAY
AMELIASBURGH
PRINCE EDWARD
SOPHIASBURGH
HILLIER
HALLOWELL
ADOLPHUSTOWN
NORTH MARYSBURGH
SOUTH MARYSBURGH
ATHOL
Napanee
Odessa
Picton
Wellington
401
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33
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96
U.S.A.

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All boundaries shown are approximate

MAP 3

revised to include other high potential resource areas (sand, gravel and crushed stone) when the current aggregate assessment is completed.

The mapped areas are in excess of anticipated future requirements and the ministry is not seeking protection of them all. Rather, it is identifying areas within which maintenance of adequate resources should be focused. Each municipality will determine the *actual* aggregate production areas and resource potential to be maintained through its official plan policies after due consideration of available reserves and competing land uses. The ministry can provide technical assistance to municipalities in this task.

Subject to certain contraints, such as height of water table, a pit or quarry can be rehabilitated to almost any desired after-use such as agriculture, recreation, forestry, housing, commercial or industrial uses.

4. STRATEGY

- complete the mapping of the mineral aggregate resource and delineate potential resource areas;
- seek to protect all legally existing pits and quarries from onsite or adjacent incompatible land uses;
- ensure that all licenced pits and quarries are rehabilitated to a suitable after-use which is compatible with the use of adjacent land in accordance with the *Pits and Quarries Control Act*;
- work with municipalities to ensure that adequate high potential aggregate resources receive protection through their official plans;
- examine municipal official plans and zoning by-laws to determine where statements for protection of aggregate reserves are required and seek appropriate amendments; and
- seek to protect accessible resources (closest to markets and including resources along highway corridors) in preference to more distant deposits..

C: minerals and fossil fuels

1. OBJECTIVE

The objective for minerals and fossil fuels in southern Ontario is to provide for a strengthening of the contribution of these resources to provincial economic development and energy production.

2. TARGET

The target for mineral resources in Napanee District is to keep open as much Crown land and unalienated mining rights as possible for mineral exploration and development. There is no assigned target for fossil fuels in Napanee District.

Specific mineral and fossil fuel production targets cannot be established because of difficulties in predicting market trends and assessing resource potential and because actual production is primarily a responsibility of the private sector.

3. DISCUSSION

Currently, mining activity in the Napanee District is limited to quarry operations providing raw materials for two cement processing plants.

The metallic and non-metallic minerals are to be found mostly in the Precambrian Shield area. Minerals which are known to be present include apatite, mica, graphite, marble, feldspar, quartz (silica), lead, zinc and iron.

The mineral resource areas identified on map 3 represent areas with high mineral exploration potential and warrant further examination. Of particular note is the high potential for silica in

Storrington Township and for graphite and high purity quartz in Bedford Township.

At present, most mineral resource deposits other than aggregate are probably not in immediate danger of becoming unavailable for use due to urbanization since most of the Precambrian Shield is sparsely settled. However, official plan policies encouraging exploration will be pursued.

4. STRATEGY

- encourage municipalities to allow extraction of minerals and fossil fuels which may be found within the district; and,
- evaluate mineral resource potential before mining rights are permanently withdrawn and ensure that Crown land activity will not be permitted which permanently commits these areas to a non-mining use.

D: fisheries

1. OBJECTIVES

The objective for fisheries management in southern Ontario is to provide opportunities for recreation and economic benefits consistent with the maintenance of healthy fish communities.

More specific objectives are:
Sport Fishing
- to meet demand within the limits of a wisely managed and rehabilitated resource;

Commercial Fishing
- to maintain a viable industry;

Bait Fishing
- to maintain current production; and

Provincially Rare and Endangered Species
- to prevent the extinction of any native fish species.

2. TARGETS

The targets for fisheries in Napanee District are:
Sport Fishing
- to provide 677,400 recreation opportunities by the year 2000;

Commercial Fishing
- to provide 907,000 kilograms (2,000,000 pounds) of fish annually by the year 2000;

Bait Fishing
- to provide 68,500 dozen fish annually from natural sources. (This production is in addition to the commercial fishing target); and

Provincially Rare and Endangered Species
- to ensure no native fish species becomes extinct.

The targets for sport, commercial and bait fishing are based upon the best information presently available. There are inadequacies in estimates of present harvest and productivity. As this information is refined, the targets will be re-evaluated.

3. DISCUSSION

a. General

Nutrient enrichment of waterbodies is a problem associated with shoreline development, particularly of inland lakes. Runoff from agricultural land and occasional overflow from sewage disposal plants also can contribute nutrients. This reduces the potential of fish species more in demand by anglers such as lake trout and walleye by the degradation of the aquatic environment. The production of algae through enrichment depletes the deep portions of lakes of oxygen required by species such as trout. Nutrients also promote growth of weeds and algae on shallow spawning shoals, decreasing the reproductive potential for fish in these areas.

Spawning and nursery areas for fish can be unknowingly destroyed, altered or disrupted. This has occurred by the filling or dredging of marshes in Weller's Bay, Presqu'ile Bay and the

Trent River, and by the construction of sand beaches, retaining walls, causeways, boathouses and docks in the Bay of Quinte and inland lakes in Bedford and Loughborough Townships. Poor construction practices or the absence of erosion controls have led to the siltation of trout spawning areas in Northumberland County and walleye spawning areas in the Bay of Quinte. Water level fluctuation, the use of aquatic herbicides for weed control, and mechanical harvesting of weeds also contribute to the disturbance of fish habitat throughout the district.

Many of the smaller inland lakes and streams in the district that are suitable for reclamation and stocking are enclosed by private lands with no public access. For example, of the several hundred miles of coldwater streams in the western end of the district which may be established and utilized as fisheries, there is presently only 1.6 kilometres (1 mile) where there is public access via conservation authority lands.

Most coldwater streams in the district are experiencing the harmful effects of bank erosion, absence of streamside vegetation, grazing cattle, dams, channelizations, and improved drainage. The extent of these problems and their effects on fish species is presently not documented.

The allocation of the allowable harvest of the fisheries resource among user groups will be based on an objective, careful examination of all relevant biological, social and economic factors to ensure that the optimum benefits accrue to the residents of Ontario. It is the responsibility of both anglers and commercial fishermen to participate in co-operative management and adhere to their catch limits, quotas and the regulations to protect the fish stocks and guarantee their perpetuation for the future.

b. Sport Fishing

Within the Napanee District there is a broad range of lake types and fish species. Some lakes have a use directed at a particular species such as trout or walleye while other lakes are attractive to the angler for species such as pike, bass and panfish. Since all lakes are attractive for one species or another it is desirable to maintain all fisheries at a biologically and socially acceptable level.

While many opportunities are available for sport fishing in the district, they may not provide the experience which is desired. For example, there may be many anglers seeking fishing opportunities for rainbow trout, yet within the Napanee District there is only one lake and four streams where rainbows can be found.

The sport fishery target will be an attempt to achieve a balance between biological supply and angling demand, and will require efforts to rehabilitate over-exploited fisheries, to maintain stable situations and, where possible, to increase fish production.

The harvest of all species by sport anglers in the district is about 150,300 kilograms (330,700 pounds) of fish per year. Of this amount up to 27,000 kilograms (59,400 pounds) is thought to be coldwater species in inland lakes and streams. This exceeds the potential yield. Therefore, coldwater fisheries resources should be protected and rehabilitated where necessary. Adjustments in the utilization of the coldwater sport fisheries will be required.

The cool and warmwater fisheries presently provide 123,300 kilograms (271,300 pounds) of fish per year. The trends through time have been an increasing angling activity, a decreasing catch per unit effort, a shift in preferred species from trout species and walleye to pike and panfish, and an unchanging level in total harvest. The total potential cool and warmwater sport fish yield from all waterbodies within the district is estimated to be 302,000 kilograms (666,000 pounds) per year. Therefore, if all presently inaccessible areas become accessible by the year 2000, the cool and warmwater sport fishery can provide a much increased share of the total sport fishing opportunities available in the district.

At present the total amount of sport fishing effort expended in the Napanee District is about 677,400 fishing occasions. This figure equals the target for sport fishing opportunities in the year 2000. Since many fisheries are deteriorating while others are rebounding, the district will attempt to maintain the level of sport fishing opportunities although a shift in utilization of about 3 percent from coldwater to cool and warmwater species appears to be necessary. This position may be altered in the future once the success of the initial fisheries strategies has been determined.

There are three general areas to which ministry strategies for sport fishing are directed. These include lake trout (coldwater) lakes, coldwater streams, and cool and warmwater lakes and streams.

Fourteen inland lakes support lake trout (map 4). These lakes are located within the townships of Bedford, Loughborough and Storrington and have a total surface area of 4,358 hectares (10,770 acres). Approximately 860 cottages and campsites presently exist on these lakes. Twelve of the lakes are intensively managed by supplemental stockings of trout. Assessment by creel census is carried out continuously while some mapping of shoreline has been done. Two of the lakes, Garter and Potspoon have no public access, thus no intensive management takes place.

The twelve lakes with public access are intensively used for the specific purpose of lake trout fishing both winter and summer. It is estimated that anglers spend 250,000 man-hours fishing on these lakes and harvest approximately 25,000 kilograms (55,100 pounds) of lake trout annually. This rate of exploitation represents a harvest level believed to be considerably greater than the biological production or capacity.

Two additional waterbodies, Draper Lake and Dog Lake, possess water quality which may be suitable for the introduction of coldwater species. Further investigation to assess their suitability will have to be carried out.

In the eastern townships of Northumberland County and the southwestern part of Hastings County ten coldwater streams and their tributaries support brook trout and brown trout (map 4).

An additional four streams tributary to Lake Ontario, namely Smithfield, Butler, Salem and Colborne Creeks presently are being rehabilitated for rainbow trout production. Most of these streams have been stocked with trout at some point in time, however, some have been discontinued due to the lack of public access or because the fish habitat has been degraded.

The remaining lakes, streams, and the portions of Lake Ontario and the St. Lawrence River within the district provide fishing for cool and warmwater species such as walleye, pike, black bass, maskinonge and panfish (map 4).

The cool and warmwater lakes spread throughout the eastern portion of the district can be considered as having high capability in terms of fish production as long as water quality, spawning habitat and nursery habitat are maintained.

These waters presently have a broad recreational use. Areas along the Trent River, Bay of Quinte and Rideau systems receive extremely heavy use both in fishing and other forms of water recreation. On the other hand, smaller waterbodies may in some cases receive extremely limited use due to the absence of public access.

c. Commercial Fishing

Commercial fishing within the district takes place in Lake Ontario and Bay of Quinte, East, West and Consecon Lakes in Prince Edward County and in the Cataraqui, St. Lawrence and Trent Rivers (map 4). Over 90 percent of the Canadian Lake Ontario commercial fishing takes place within the Napanee District.

At the present time the industry supports 105 commercial fishermen holding a total of 278 commercial fishing licences permitting a particular type of gear in a designated area.

The average annual harvest for the past four years has been 950,000 kilograms (2.1 million pounds). Methods of harvest include gillnets, hoopnets, trapnets, baited hooks, seines and carpnets. Inland waters only permit the use of hoopnets and carpnets for the sake of the sport fisheries in these areas, which include Weller's Bay, East Lake, West Lake, Consecon Lake, the Trent River and the Cataraqui River.

The predominant fish species harvested in the commercial catch in the Napanee District include American eel, yellow perch, bullheads, sunfish, rock bass, crappie and smelt. Heavy fishing pressure presently exerted on these fish species is expected to continue in the future. Although there have been severe declines in fish populations, the number of commercial fishermen has remained relatively high in the district. To most fishermen, fishing is a part-time but socially and economically important activity.

The decline of certain fish species, the attempted rehabilitation and protection of others and conflicts between sport and commercial fishing have impeded the growth of this industry. It is hoped that improving fish numbers, fish communities and contaminant levels will result in an improved industry in future.

Since the early 1970's the identification of contaminants in fish has depressed the fishery. The commercial fishing season is closed all year in Lake Ontario for lake trout, coho and chinook salmon, freshwater drum and bowfin.

NAPANEE DISTRICT

FISHERIES

Kilometres 0 5 10 15 20 25
Miles 0 4 8 12 16

LEGEND

Sport Fisheries

Coldwater species

- ■ lake
- ⊟ stream

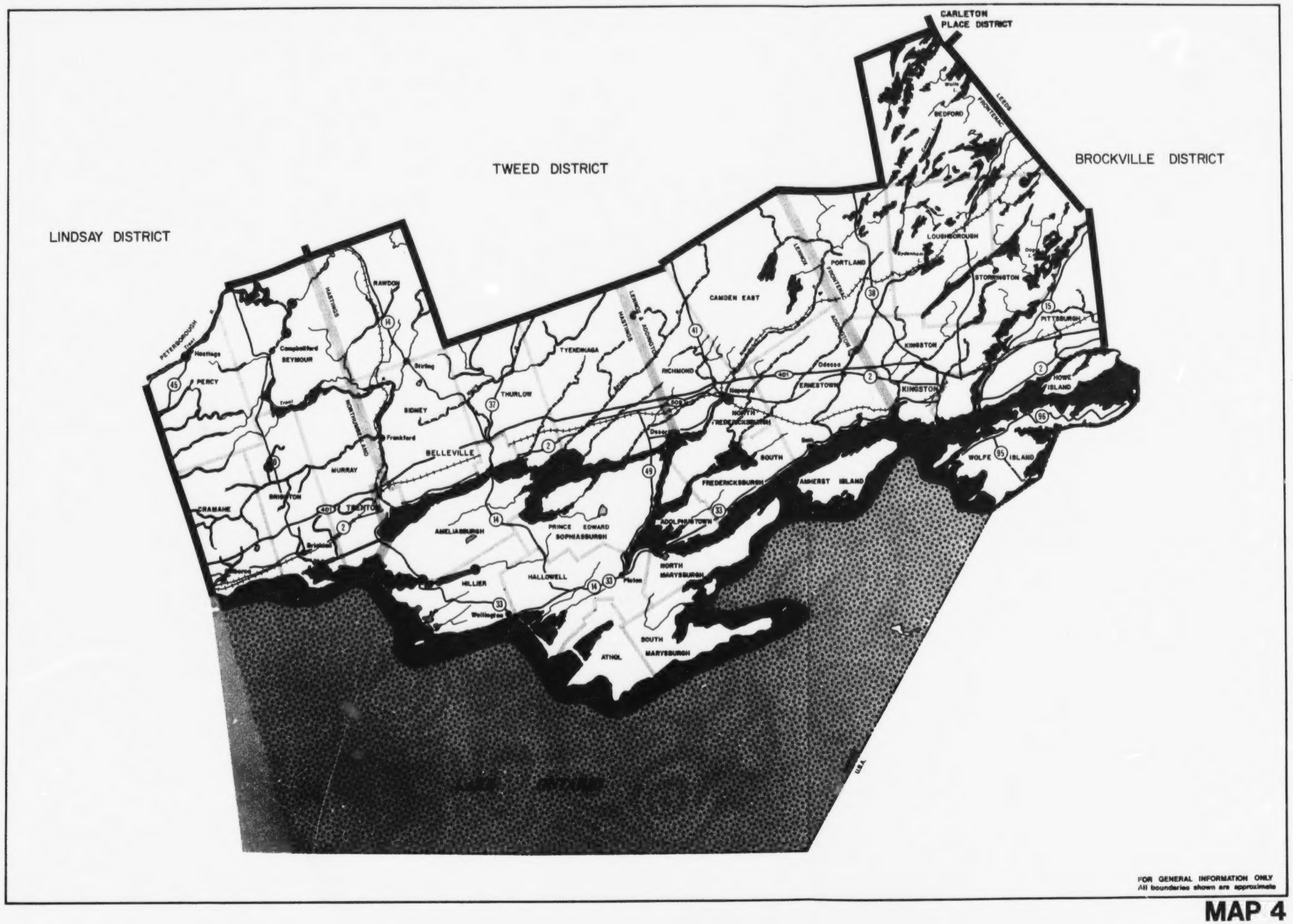
Cool and warmwater species

- ■ lake
- ⊟ stream

Commercial Fisheries

- ▨

- ● Special area (fish sanctuary, hatchery, research station)



CARLETON PLACE DISTRICT
TWEED DISTRICT
BROCKVILLE DISTRICT
LINDSAY DISTRICT
PETERBOROUGH
Hastings
PERCY
SEYMOUR
Campbellford
RAWDON
HASTINGS
Stirling
SIDNEY
Frankfort
MURRAY
NORTHUMBERLAND
BRIGHTON
CRAMAHE
TRENTON
Brighton
BELLEVILLE
THURLOW
TYENDINAGA
LENNOX & ADDINGTON
RICHMOND
CAMDEN EAST
Napanee
NORTH FREDERICKSBURGH
SOUTH FREDERICKSBURGH
ADOLPHUSTOWN
PORTLAND
FRONTENAC
ERNESTOWN
Odessa
Bath
AMHERST ISLAND
KINGSTON
PITTSBURGH
STORRINGTON
LOUGHBOROUGH
BEDFORD
LEEDS
HOWE ISLAND
WOLFE ISLAND
AMELIASBURGH
PRINCE EDWARD
SOPHIASBURGH
HALLOWELL
HILLIER
Wellington
Picton
NORTH MARYSBURGH
SOUTH MARYSBURGH
ATHOL
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FOR GENERAL INFORMATION ONLY
All boundaries shown are approximate

MAP 4

Production has remained fairly constant over the past five years and likely will continue to do so providing present trends continue. However, the situation can change due to fluctuations in market values, contaminant restrictions and weather conditions. Consideration also must be given to fisheries which have high incidental catches of yellow pickerel and lake trout. Therefore, while demand may increase, the harvest may initially decrease until alternative fishing methods are adopted, which do not threaten non-target species.

d. Bait Fishing

The trend over the past few years has been a decline in harvest. A new licensing system and allocation method is partly responsible, but generally the cost-benefit of harvesting baitfish is no longer as attractive as it is to import bait from outside the district. However, the assigned target can be met.

Most waterbodies in the district are presently licensed. Lake Ontario and the Bay of Quinte have an unrealized potential for baitfish. However, alternative harvesting methods may need to be considered in this area since traditional inland harvest techniques may not be suitable. If this proves successful, the harvest of baitfish within the district should increase.

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4. STRATEGY

a. General

- continue the rehabilitation efforts directed at key species to protect their habitat and establish a desirable fish community which will allow an optimum harvest of all species. For Lake Ontario rehabilitation, efforts will be directed at lake trout, walleye, whitefish and lake herring. These efforts, particularly lake trout, are long-term (10-20 years). The Napanee District is committed to restoring naturally reproducing populations of lake trout in Lake Ontario. Specific actions also would include stocking, controlling lampreys, discouraging the incidental catch of lake trout by commercial fishermen and assessing the condition of lake trout spawning shoals. For inland lakes, rehabilitation efforts will be directed at walleye and lake trout to protect their habitat and establish desirable fish communities which will allow an optimum harvest of all species;
- protect sensitive habitat such as fish spawning sites in streams, floodplains and areas near shorelines which play an integral role in the maintenance of native fish populations;
- continue fish stocking in Lake Ontario as a rehabilitation tool for lake trout to establish a self-sustaining population. In future as stocks become available, brown trout may be introduced to nearshore areas of eastern Lake Ontario to establish a put-and-delayed-take sport fishery. In inland waters the stocking of lake trout and speckled trout will continue with the purpose of maintaining healthy fish populations through supplemental stockings to native fish populations, as well as for artificial introductions. For walleye populations which are showing stress, fish introductions will be considered if and when hatcheries are capable of producing these species;
- work with American jurisdictions to ensure that balanced harvests of fish stocks are assured and management strategies are compatible;
- increase points of public access to water by encouraging municipalities to retain road allowances in public ownership and to develop them for water access, and by encouraging local conservation authorities to create public access points; and
- continue assessment of sport fisheries in order that as many variables as possible affecting productivity levels will be monitored, controlled or corrected to maintain or increase fish production.

b. Sport Fishing

For lake trout (coldwater) lakes:

- design regulation changes to alter fishing methods rather than reduce fishing seasons. The result will be a reduction in harvest without a reduction in fishing opportunities;
- assess the viability of the establishment of lake trout fisheries in lakes such as Draper and Dog Lakes, where lake trout are incapable of natural reproduction, but where the fishery could be entirely supported by hatchery reared fish;
- assess the number and condition of spawning shoals and then attempt spawning shoal rehabilitation in lakes where problems exist with sedimentation and weed growth (e.g. Buck and Loughborough Lakes); and
- continue to monitor the effects of water level fluctuations and establish a working relationship with the control agencies. These include the ministry's Rideau Lakes assessment unit, cottagers assocations, the Gananoque Light and Power Company and Parks Canada.

For coldwater streams:

- encourage private landowners to provide public access along stream corridors;
- increase landowners' awareness and seek their co-operation in rehabilitation measures designed to improve habitat conditions;
- improve habitat along priority coldwater streams by entering into *Woodlands Improvement Act* agreements;
- solicit the participation of local rod and gun clubs and other interested groups in adopting rehabilitation programs on coldwater streams wherever possible;
- through the plan review process, recommend actions to alleviate possible harmful effects of development proposals; and
- liaise with municipalities and other government agencies (e.g. conservation authorities, Ministry of Agriculture and Food and Ministry of the Environment) to help co-ordinate stream management concerns.

For cool and warmwater lakes and streams:

- inventory lakes to determine which ones show signs of over-exploitation and implement regulation changes to re-establish optimum harvest levels;
- inventory walleye spawning sites which have been degraded and are responsible for decreased fish production, then rank in order of importance for rehabilitation;
- encourage the protection of fish habitat such as spawning sites in floodplain and nearshore areas through continued input into the plan review process, by commenting on the impacts of shoreline development and recommending actions to alleviate those effects; and
- encourage anglers by public education through cottagers associations and rod and gun clubs, to utilize coarse fish species (e.g. bullheads, crappies, sunfish) in order to help maintain a balanced fish community.

c. Commercial Fishing

- direct rehabilitation efforts at lake trout, walleye, whitefish and lake herring. These efforts which are long-term (10-20 years) are committed to establishing naturally reproducing populations. Specific actions shall include stocking, controlling lampreys, discouraging the incidental catch of lake trout by commercial fishermen, and assessing the condition of lake trout spawning shoals;
- in concert with the commercial fishing industry, develop alternative fishing methods and gear to optimize harvests of commercial species without jeopardizing rehabilitation efforts; and
- encourage "management fishing" in unconventional commercial fishing areas as a positive tool in managing game fish populations for angling (e.g. removal of carp).

d. Bait Fishing

- encourage the use of alternative bait fishing areas such as the Bay of Quinte and Lake Ontario; and
- increase the efficiency of bait fishing practices by continuing to control and inspect the use of proper equipment which will ultimately decrease handling mortality.

E: wildlife

1. OBJECTIVES

The objective for wildlife management in southern Ontario is to provide opportunities for social and economic benefits from wildlife recreation and fur harvest consistent with the maintenance of healthy wildlife populations.

More specific objectives are:
Hunting
- to provide opportunities sufficient to maintain the present rate of participation and quality of hunting by residents; and
- to maintain the contribution to the economy of hunting by non-residents;

Trapping
- to sustain the maximum yield from wild furbearer populations while maintaining the present diversity of fur types; and

Other Uses
- to prevent additional species from becoming endangered or threatened;
- to improve the status of existing endangered or threatened species with the objective of removing them from the endangered species list; and
- to maintain populations of all wildlife species (both non-game and game) at levels sufficient to:
  - provide opportunities for recreational enjoyment, aesthetic appreciation, scientific investigation, and educational uses,
  - provide benefits from tourism,
  - ensure environmental quality and ecosystem integrity, and
  - ensure the safety of the public.

2. TARGETS

The targets for wildlife in Napanee District are:
Hunting
- to provide by the year 2000, 140,000 opportunities for hunting recreation per annum, including 7,000 opportunities for big game hunting, 78,000 opportunities for small game hunting and 55,000 opportunities for waterfowl hunting;

Trapping
- to manage populations of wild fur-bearers such that an average harvest of 62,000 pelts can be achieved by the year 2000 while maintaining the present species diversity; and

Other Uses
- to ensure no native wildlife species becomes extinct.

The targets for hunting and trapping are based upon the best information presently available. As this information is refined, the targets will be re-evaluated.

A target for wildlife viewing has not been included due to the difficulty of measuring this activity and of assessing the influence of management actions. Viewing targets will be defined through ongoing policy development and will be incorporated into the *Land Use Guidelines* at an appropriate opportunity.

3. DISCUSSION

a. General

Whether it be for hunting or trapping, the lack of public access to wildlife areas is potentially the greatest problem for wildlife management in the district. This not only restricts the utilization of the resource for hunting or trapping, but makes inventory and management work difficult if the landowner's co-operation is not obtained. At present, information is lacking concerning how much potential suitable lands are "closed" to wildlife management whether through posting or otherwise.

Another serious concern of proper wildlife management is the loss of critical habitat which leads to a decline in wildlife numbers. Examples include the development of housing subdivisions next to deer winter concentration areas, and the loss of wetland area for ducks or dense marsh for muskrats. Potential threats such as proposals for peat extraction in marsh areas may prove a serious threat in future.

Wildlife populations are typically variable, with population numbers varying due to climatic or other habitat conditions. When populations are low there is the opportunity for over-harvest by hunting or trapping.

Wildlife found within the Napanee District are those species typically associated with the mixed forests and agricultural areas of southern Ontario. Common fur-bearers include muskrat, beaver, raccoon, red squirrel, fox, otter, skunk, weasel, coyote and mink. Game species such as cottontail rabbits and ruffed grouse are common, while European hare, pheasants and Hungarian partridge are found to a lesser degree. Moose can be considered scarce or absent while white-tailed deer are abundant in certain areas. Black bear populations, although low, appear to be increasing in northern sections of the district. Waterfowl can be considered as highly significant throughout the district, especially along the north shore of Lake Ontario, the Bay of Quinte and the St. Lawrence River.

b. Hunting

Hunting is one of the dominant activities in the district and includes big game, small game and waterfowl. This activity is not only important to local hunters, but is also important to the economy of the local tourist industry.

The big game hunting targets for the Napanee District are achievable. Big game hunting within the district primarily involves white-tailed deer. Bear are hunted occasionally but the harvest is considered negligible. Deer are located within the agricultural lands throughout the district with concentrations in Prince Edward and Northumberland Counties (map 5). The Napanee District currently provides for 8,000 hunting opportunities for deer. Under present regulations this can be maintained with an approximate harvest of 100 deer per season. However, there is an unrealized potential in the areas of the district where firearm restrictions (south of Highway 401 and Northumberland County) and closed seasons (Prince Edward County) exist. An archery season exists for all of the district except Prince Edward County. However, it is unknown what share of the harvest or opportunities archery provides.

On a district-wide basis, big game hunter success can be considered poor to average. The hunting opportunities and harvest could potentially double if firearms are permitted or the use of archery equipment increases in the future.

For the Napanee District, it is estimated from Ontario Provincial Police reports that property damage costs arising from motor vehicle accidents with deer are $20-30,000 each year. In Prince Edward County where crop damage to orchards also occurs, costs are higher than anywhere else in the district. Establishment of a deer hunting season would reduce these costs significantly.

Problems in the maintenance of deer populations include pipelines and hydro corridors transecting deer winter concentration areas, subdivisions encroaching on deer range, predator problems involving dogs and coyotes, and poaching.

Habitats for small game occur throughout the district and are not mapped. Small game hunting is important in that it attracts hunters from urban areas. Species taken include cottontail rabbits, snowshoe rabbits, jackrabbits, European hare, ruffed grouse, pheasants, Hungarian partridge, woodcock and snipe.

The Napanee District can supply and possibly exceed the assigned target of 78,000 small game hunting opportunities.

Small game populations fluctuate widely with changes in climatic conditions, predator numbers and food abundance. Agricultural practices such as the removal of fence rows can reduce the area of potential habitat.

One of the problems restricting use of small game is the posting of land to trespass. It is currently not known to what extent land is posted to trespass in the district.

Waterfowl hunting targets are achievable in the Napanee District. The entire district is important for waterfowl. Species include mallards, blacks, woodducks, teal, widgeon, gadwall, pintail, scaup, ringnecked duck, goldeneye, bufflehead and mergansers. Staging or resting areas include the waters of the Bay of Quinte, the shores of Prince Edward County, the water surrounding Amherst, Howe and Wolfe Islands and Presqu'ile Bay. Inland areas with significant waterfowl concentrations include the Murray Marsh, Camden and Varty Lakes, Napanee Lake and Odessa Lake, plus portions of the Rideau Canal.

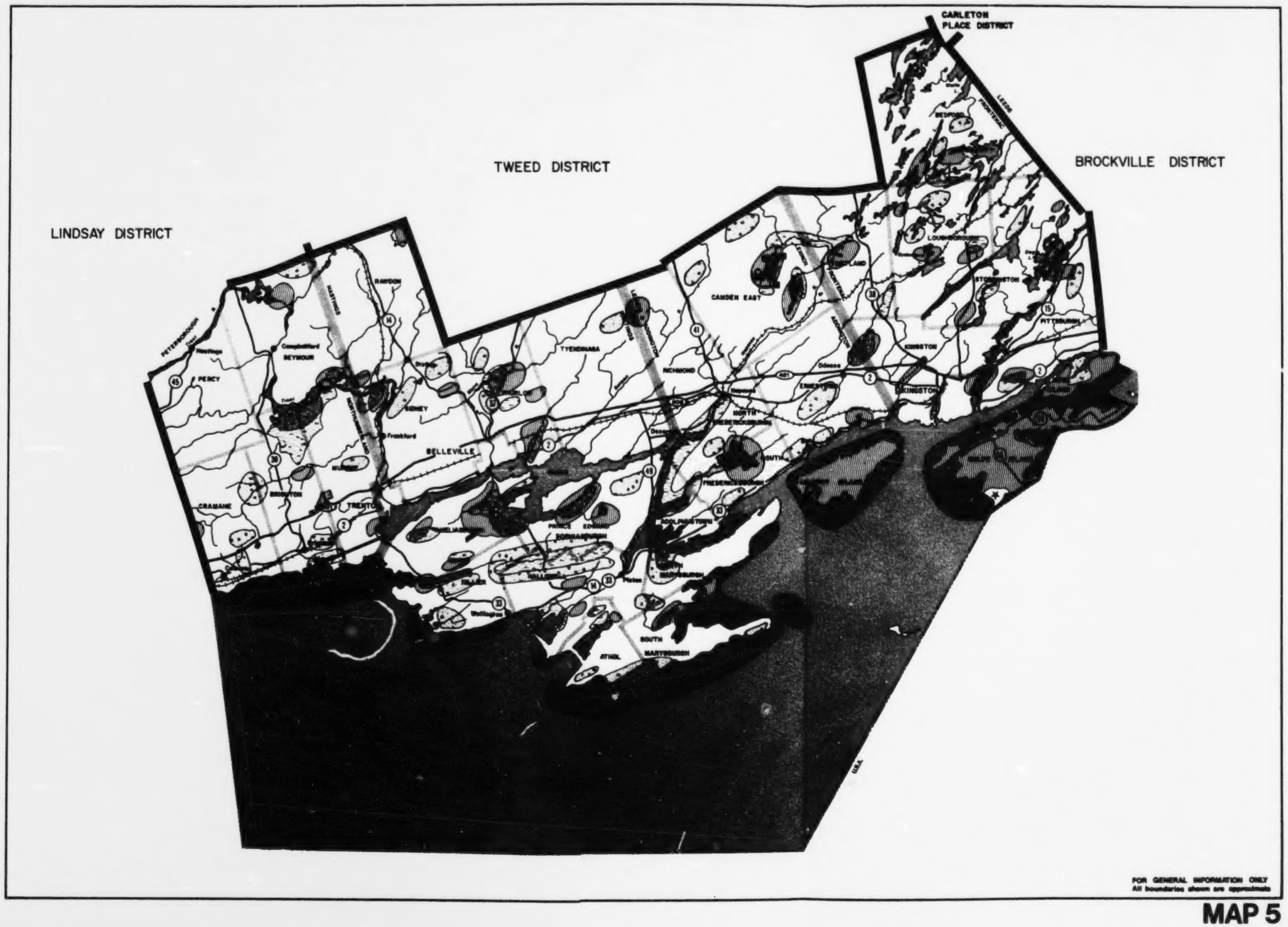
Waterfowl populations fluctuate widely with changing environmental conditions. However, overall waterfowl hunting can be considered good to excellent in the district.

NAPANEE DISTRICT

WILDLIFE

LEGEND

- ▨ Deer winter concentration area
- ▨ Waterfowl habitat
- ▨ Wetland
- ■ Wildlife management area
- ■ Wildlife agreement area
- ★ Special area (waterfowl viewing, Canada goose staging area)


Kilometres 0 5 10 15 20 25
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CARLETON PLACE DISTRICT
TWEED DISTRICT
BROCKVILLE DISTRICT
LINDSAY DISTRICT
PETERBOROUGH
PERCY
SEYMOUR
Campbellford
RAWDON
HASTINGS
SIDNEY
Frankford
BELLEVILLE
TYENDINAGA
CAMDEN EAST
RICHMOND
LEEDS
BEDFORD
LOUGHBOROUGH
STORRINGTON
PITTSBURGH
KINGSTON
ERNESTOWN
Odessa
NORTH FREDERICKSBURGH
SOUTH FREDERICKSBURGH
ADOLPHUSTOWN
CRAMAHE
BRIGHTON
TRENTON
PRINCE EDWARD
SOPHIASBURGH
HALLOWELL
Wellington
ATHOL
SOUTH MARYSBURGH
U.S.A.
FOR GENERAL INFORMATION ONLY
All boundaries shown are approximate

MAP 5

Geese are underutilized, partly due to limited access on private property. High goose concentration on Wolfe Island and in the Brighton area results in crop depredation.

c. Trapping

Trapping activity within the Napanee District fluctuates with changes in demand and with the abundance of these animals. Fur harvest for the period 1976-80 has averaged about 52,000 pelts. Muskrat make up over 85 percent of the harvest with raccoon and beaver contributing, nearly equally, another 12 percent. It is suspected that some fur-bearing animals such as muskrats and raccoon may be harvested in excess and this will be investigated. Beaver, mink and fox could be taken in greater numbers.

Trapping activity for fur-bearers occurs primarily on wetlands and their fringe areas. Therefore, all wetlands throughout the district should be considered as contributing to this resource. Species of land fur-bearers such as raccoon, fox and coyote occur throughout the entire district.

The most recent market trends for fur-bearers show considerable strengthening and the market is expected to remain firm for the next few years.

The district currently issues over 1,000 trapping licences within the commercial fur industry.

Much of the demand for trapping areas must be met through the use of private land, as the district Crown land areas are fully utilized. As a result the district likely will be unable to meet overall demand for traplines. However, the target in terms of number of pelts harvested is achievable. In addition, social factors, specifically anti-trapping sentiment, may affect wild fur harvest in future.

Habitat conditions are ever-changing. The filling of marshes and fluctuating water levels have an adverse impact on the production and harvest of fur-bearers.

d. Other Uses

The protection of provincially rare and endangered species is accomplished by first determining the locations and habitat of such species. Some documentation exists in the district, but more inventory work is required and important areas for protection need to be established.

The district provides an estimated 31,000 opportunities at the Brighton Provincial Wildlife Area, Camden Lake Wildlife Management Area, Pointe Petre Provincial Wildlife Area and Presqu'ile Provincial Park. Other areas of concentrated viewing activity include the south shore of Prince Edward County, Amherst Island and Wolfe Island. Species most sought after by viewers are migratory birds during spring migration. Hawk concentrations are of similar interest in the fall. While there are no specific facilities for viewing white-tailed deer at Pointe Petre Provincial Wildlife Area and the Murray Marsh, such facilities may be considered in the future.

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4. STRATEGY

a. General

- inventory, map and put into an order of importance, high quality wetlands or habitat types critical to particular species being managed (e.g. deer) in order to encourage the protection and management of habitat on private land. Such a procedure will facilitate appropriate use of limited funds for management;
- provide information for the plan input and plan review process by commenting on significant wildlife habitats and recommending actions to alleviate harmful alterations or loss of such habitats;
- liaise with the public, other ministries, other agencies, municipalities and conservation authorities to ensure that significant habitats, especially wetland areas, are recognized and protected;
- encourage, through an active extension program, the maintenance or development of access to private lands, the management of public lands and the acquisition of critical areas;
- engage in intensive wildlife management in the three Provincial Wildlife Areas (Brighton, Camden Lake, Point Petre) to maximize recreational benefits and to demonstrate wildlife management techniques. This will include habitat protection, presentation of interpretive features through displays, trail systems and controlled hunting;
- encourage the protection and conservation of non-game animals and their habitats to provide opportunities for recreation enjoyment, aesthetic appreciation and educational uses. Non-game animals include porcupine, shorebirds, swans, songbirds, herons, chipmunks, snakes, turtles and frogs;
- develop an active public information and education program to explain the role of hunting and trapping in wildlife management, to explain the need for hunting and

trapping as a control mechanism for "nuisance" animals in urban and rural areas and, through the public participation process, to involve the public in decisions affecting wildlife management;

- prepare management plans for all important wildlife habitats;
- maintain ministry access and encourage the retention of municipal access to lands important for wildlife uses;
- take specific control action where wildlife destroys domestic animals or where wolves and coyotes harass deer in yarding areas; and
- provide enforcement of the *Game and Fish Act* at a level sufficient to maintain wildlife populations.

b. Hunting

For big game hunting:

- encourage private landowners to utilize the *Woodlands Improvement Act* agreement to meet the objectives of both forestry and wildlife;
- solicit *Woodlands Improvement Act* agreements in areas considered to be significant deer habitat and to increase the availability of wildlife food species on private land;
- complete the determination of critical wintering areas on private land for wildlife and encourage the use of wildlife agreements to ensure protection of these areas;
- develop and implement an inventory of deer populations and habitat;
- foster a greater understanding of the benefits and encourage support for opening deer seasons in areas that are now closed and where deer populations are abundant;
- provide advice to landowners interested in managing deer on private land;
- continue to protect deer populations from predation by domestic dogs through public awareness and law enforcement programs;
- maintain a level of enforcement on poaching and legal resource users sufficient to ensure optimum deer populations in accordance with the district enforcement plan; and
- manage resources within yarding areas to meet the needs of wintering deer, including supplementary feeding, browse cutting, trail packing and predator control.

For small game hunting:

- continue to provide advice to private landowners on the benefits and methods of managing small game in conjunction with other land use practices; and
- encourage the preservation of small game habitats in urban areas by making the public aware of benefits and habitat requirements through the provision of slide/film shows, brochures and field demonstrations.

For waterfowl hunting:

- encourage the protection of important wetlands, particularly in urban areas, and explain their value to waterfowl through public awareness and education;
- provide management advice to landowners interested in managing waterfowl;
- provide management advice on controlling specific nuisance waterfowl. Problems are predominantly with geese, but some cases involving ducks have been known to occur;
- encourage fish and game clubs, 4-H Clubs and other interested groups to undertake waterfowl management projects on private land throughout the district; and
- continue to support Ducks Unlimited (Canada) in the establishment of viable waterfowl production areas on Crown and private lands throughout the district.

c. Trapping

- continue to support the training of trappers in the most humane and efficient harvest methods;
- implement a private land trapping program to ensure the number of trappers does not exceed the capability of the fur resource. This involves determining the production of areas to be harvested and adjusting the harvest;
- encourage the establishment of local trappers councils to increase professionalism in trapping. The number of councils needed will have to be determined; and
- explain through public awareness programs, the role of fur-bearer harvesting, humane trapping methods, and benefits of the fur industry to the general public, the educational system and interest groups. Programs could include media advertising, slide/film presentations, and preparation of pamphlets.

d. Other Uses

- protect habitat and rare and endangered species from destruction or disturbance. This will require an inventory of species and the mapping of their habitat. Protection will be provided through the inclusion of appropriate policies in municipal official plans, through the acquisition of essential areas where necessary (funds permitting), and through appropriate actions in Crown land areas;

- initiate a public awareness program on provincial lands, identifying the viewing opportunities that exist within the district, particularly as they relate to waterfowl; and
- identify to boards of education the wildlife viewing opportunities afforded by the district's Provincial Wildlife Areas and Presqu'ile Provincial Park.

F: provincial parks

1. OBJECTIVES

The objectives for the provincial parks system in southern Ontario are:

Protection
- to protect provincially significant elements of the natural and cultural landscape of Ontario;

Heritage Appreciation
- to provide opportunities for exploration and appreciation of the outdoor natural and cultural heritage of Ontario;

Recreation
- to provide provincial park outdoor recreation opportunities ranging from high intensity day use to low intensity wilderness experiences; and

Tourism
- to provide Ontario's residents and out-of-town visitors with opportunities to discover and experience the distinctive regions of the province.

2. TARGETS

The targets for the provincial parks system in Napanee District are:

Protection
- Earth Science to protect provincially significant, representative and special earth science features in Napanee District which contribute to the representation of the thirty-five geological environments of southern Ontario;
- Life Science to protect provincially significant life science features in Napanee District which contribute to the representation of each vegetative site type in the twenty-six site districts in southern Ontario;
- Historical Resources to protect provincially significant landscape-related prehistorical resources which contribute to representation of the fourteen themes of southern Ontario's history;

Heritage Appreciation
- to provide opportunities for exploration and appreciation of the outdoor natural and cultural heritage of Napanee District; and

Recreation and Tourism
- to provide annually, by the year 2000, the following recreation opportunities for residents and visitors to provincial parks in Napanee District:

  Day Use
    2,177,500 swimming opportunities
    1,098,300 picnicking opportunities
  Extended Use
    370,600 camping opportunities
  Back-country Use
    1,000 opportunities

3. DISCUSSION

The objectives and targets stated above are normally achieved through establishing provincial parks of the six different classes (wilderness, nature reserve, historical, natural environment, waterway and recreation) and through zoning and managing these parks according to the appropriate planning and management policies.

In the Napanee District there are six provincial parks. Frontenac, Sandbanks, Presqu'ile and Ferris are natural environment parks. North Beach and Lake on the Mountain are recreation class parks which provide day use only. Two other parks, Adolphustown and Fairfield, are operated by the St. Lawrence Parks Commission. They are similar to the ministry's recreation class of park and contribute to the district's recreation and tourism targets. There also is one park reserve, Casey Point, located on the

Cataraqui River north of Kingston. Sandbanks Provincial Park now encompasses the former Outlet Beach Provincial Park, the former Sandbanks Provincial Park and the provincially owned lands between. Two candidate provincial parks have been identified; Timber Island in Lake Ontario and the waterway connecting Charleston Lake (Brockville District) and Otter Lake. The extent to which these and other areas help to achieve the district's provincial park targets is discussed in the following pages.

a. Protection

For planning purposes the natural and cultural landscape of Ontario has been divided into three components — earth science, life science and historical resources. A framework has been developed for each component which classifies the land-based natural and cultural resources of the province into geological environments, vegetation site types and historical themes. The objective is to eventually identify and protect a representative example of each of these units.

These earth and life science features and historical resources fit within the broader framework of areas of natural and scientific interest.

Areas of natural and scientific interest are areas of land and water containing natural landscapes or features which have been identified as having values related to protection, natural heritage appreciation, scientific study or education. They may vary in level of significance. The most significant areas may contribute to the achievement of the ministry's protection objective. These are listed in figures 1, 2 and 3 and are shown on map 6.

Where areas of natural and scientific interest occur on public lands managed by the ministry, it will ensure that the land uses and activities which occur, provide for the protection of identified values.

On private lands, the ministry will, through cooperation with others, attempt to ensure that landowners are aware of significant features on their properties and seek the owner's cooperation in protecting such features. The identification of areas of natural and scientific interest on private land does not indicate an intent of the ministry to acquire this land, or to restrain or prevent any private use of land.

Areas of natural and scientific interest encourage the protection of additional features not regulated as provincial parks and provide a focus for both the public and private sectors to contribute to the protection of Ontario's natural heritage. A number of sites have been identified but further inventory is required.

The earth science framework divides Ontario's geological history into geological environments — periods of time during which a series of related geological processes gave rise to the diversity of rock types and landforms which make up the modern landscape of Ontario. Each of these environments is characterized by specific features and landforms which illustrate the processes which occurred during that period of geological time.

Features representing at least twelve earth science environments are located within Napanee District. The existing parks provide good to ex-

FIGURE 1 AREAS OF NATURAL AND SCIENTIFIC INTEREST — EARTH SCIENCE REPRESENTATION IN NAPANEE DISTRICT

Geological Environment	Representation in Existing Parks	Other Sites
Precambrian		
Helikian Grenvillian Island Arcs, Sedimentary Basins and Continental Drift	Frontenac Casey Point (park reserve)	Shannonville Inlier Ameliasburgh Inlier
Paleozoic		
Late Cambrian-Early Ordovician Marine Nearshore	—	Inverary road-cut unconformity
Middle Ordovician Marine Carbonate Platform	Ferris (2) Presqu'ile Lake on the Mountain (2)	Kingston unconformity Healey Falls Elgin crossroads unconformity Millhaven stromatoporoids

FIGURE 1 continued

Geological Environment	Representation in Existing Parks	Other Sites
Pleistocene Sequence of environments is not clearly defined for eastern Ontario	Ferris (2)	Armstrong peninsula Hermiston Lake esker site Petherwick Corners esker site Marlbank esker site (3) Cataraqui clay ridges Bloomfield beach Petherwick Island beaches Oak Lake Island beaches Brighton Provincial Wildlife Area Cramahe Hill beaches
Recent Includes existing landforms representative of processes which have occurred throughout geological time		
Tectonic Landforms	Frontenac (2)	Evidence of past tectonism is common on the Frontenac Axis
Mass Wasted Landforms	Frontenac (2) Lake on the Mountain (2)	Small rockslides, talus slopes etc. are common throughout the district
Glacial Landforms	Ferris Frontenac	Armstrong Peninsula (drumlin) Hermiston Lake esker site Petherwick Corners esker site Marlbank esker site (3)
Aeolian Landforms	Sandbanks Presqu'ile North Beach (2)	Big Sandy Bay (5)
Marine/Lacustrine Landforms	Sandbanks Presqu'ile North Beach (2)	Cataraqui clay ridges Bloomfield beach Cramahe Hill beaches Brighton Provincial Wildlife Area Petherwick Island beaches Oak Lake Island beaches Big Sandy Bay (5) McMahon Bluff (5)
Fluvial Landforms	—	Features occur along present and ancient watercourses. No specific sites have been identified as being provincially significant
Karst Landforms	Ferris (1)	Moira Karst (4) Roblin Hell-holes
Astrobleme Landforms	—	Holleford Crater

(1) Quality of representation is poor, no nature reserve zone proposed
(2) Features in park, no nature reserve zone proposed
(3) Site is partly in Tweed District
(4) Site of special significance
(5) Life science site which contains earth science features

Derived from ***Eastern Region Provincial Parks System Plan****, 1981.*

cellent representation of four of these environments and poor to fair representation of another five environments. Frontenac Provincial Park has extensive exposures of Precambrian rocks. The beaches and dunes of Presqu'ile and Sandbanks Provincial Parks together provide excellent representation of aeolian (wind blown) and lacustrine (lakeshore) environments. Mass wasting in the form of rockslides is represented by cliffs and talus slopes found in all the parks but particularly Lake on the Mountain and Frontenac.

Outside of the existing parks system, the district has an excellent array of Pleistocene (glacial and interglacial) features. These include drumlins and eskers, and raised beaches and clay plains associated with glacial lakes. Several sites which represent these features have been identified (figure 1). The district also has the best karst (limestone solution) features in eastern Ontario. Two sites which represent karst processes are considered significant. One of these, the Moira Karst site is of special significance due to the degree to which it is threatened. This site includes both Moira Cave and the scuttle holes in the bed of the Moira River.

Many of the earth science sites listed in figure 1 are on private land. The sites vary in sensitivity. For the most part existing land uses are compatible with the protection of the significant earth science features present. Other sites are or may become threatened by aggregate extraction or development. Their protection will require negotiation with the landowner. Some sites, particularly bedrock features, are located in roadcuts. Their protection will require cooperation between the Ministry of Natural Resources and the Ministry of Transportation and Communications as well as county road officials.

The life science framework divides Ontario into eight site regions, each of which is subdivided into a number of site districts, areas containing similar landform patterns. Napanee District contains one site district (6-15) in its entirety and parts of another five site districts (6-7, 6-8, 6-9, 6-10, 6-13). Figure 2 shows the distribution of existing parks and other sites identified among the site districts.

No sites of major significance have been identified in the Napanee District portion of site districts 6-7 and 6-13 which barely extend into the district. Further work may be required if representative sites cannot be found in the Lindsay District.

Site district 6-8 corresponds with the Peterborough Drumlin field, a large physiographic unit extending from north of Belleville west to Lake Simcoe. Glacial tills, often in the form of oblong drumlin hills, and clay deposits are the dominant soil materials. Sandy and organic (muck and peat) soils are less common. Ferris Provincial Park lies within the site district; however, its natural plant communities are not representative of undisturbed sites. Two other sites have been identified as having significance. Both are wetlands along the Trent River.

Site district 6-9 is the limestone plain with shallow soils lying between the Precambrian Shield to the north and the deeper soils of the Peterborough Drumlin field and Lake Iroquois clays to the south. It extends from the Kingston area west to Lake Simcoe. The eastern half is shared by the Napanee and Tweed Districts. The site district has an abundance of shallow, stony loam soils. Of particular significance, however, are the areas of limestone pavement which experience cyclic periods of flooding and aridity. These sites are called "alvars", a term borrowed from Sweden where similar patterns occur. Alvars have unusual vegetation which includes several rare species. Three alvar sites have been identified in the Napanee District. Two of these are considered both highly significant and threatened by development. These are the Salmon River Alvar and Camden East Alvar. Another unusual feature of the site district is the diversity of wetlands, ranging from calcareous fens to acid bogs and floodplain forests. Three wetland sites have been identified as being significant.

Site district 6-10 corresponds with the Frontenac Axis, that portion of the Precambrian Shield which extends roughly from Highway 7 south to the Thousand Islands east of Kingston. The site district is shared by four Ministry of Natural Resources administrative districts and has three large natural environment provincial parks, of which Frontenac is located in the Napanee District. Together, these parks provide good representation of rock, loam and organic site types. So far only one additional site has been identified within the Napanee portion of the site district.

Site district 6-15 encompasses Prince Edward County and a narrow strip of the mainland on the north shore of Lake Ontario from Presqu'ile to Gananoque. It includes Amherst, Wolfe, Howe and the smaller limestone islands. The site district contains four provincial parks, two of which — Prequ'ile and Sandbanks, both natural environment class parks — contribute to its representation. Presqu'ile Provincial Park represents marsh beach and dune vegetation. Sandbanks Provincial Park represents successional and mature vegetation on sand-based sites. Several sites outside the existing parks are considered significant. These include colonial bird nesting islands, areas where migrating birds concentrate, diverse wetlands and areas of significant upland vegetation. The Fish Lake Wetlands have diverse wetland vegetation and breeding populations of uncommon wildlife species and several rare plants. Timber Island is currently designated a wilderness area under the *Wilderness Areas Act*. It has successional forests on thin soils over limestone. The island will be redesignated as a nature reserve class of provincial park. This will allow better control over activities on the island which might reduce its value as a scientific study area for which purpose it was originally donated to the province.

The federal government contributes to life science protection objectives of the district through acquiring and managing significant lands. Examples include Prince Edward Point and Yorkshire Island managed by the Canadian Wildlife Service. Other agencies which protect natural areas include the various conservation authorities which own lands within the district. Examples of significant conservation authority sites include the Little Cataraqui Creek area (marsh vegetation) and Depot Lakes.

FIGURE 2 AREAS OF NATURAL AND SCIENTIFIC INTEREST — LIFE SCIENCE REPRESENTATION IN NAPANEE DISTRICT

Site District and Soil Material	Representation in Existing Parks	Other Sites
Site District 6-7 Only about 10 percent of the site district lies within Napanee District. A few sites are under study.		
Site District 6-8 Site district is shared with Lindsay District.		
Rock	Ferris (1)	Rocky sites are not common
Sand	—	Murray Marsh (2)
Loam	Ferris (1)	Murray Marsh (2) Trent River Final Bend Swamp
Clay	—	Some potential but no sites identified to date
Organic	—	Murray Marsh Trent River Final Bend Swamp
Site District 6-9 Site district is shared with Lindsay District and Tweed District.		
Rock	—	Salmon River Alvar (3) Camden East Alvar (3) Asselstine Alvar Roblin Hell-holes Moira Karst (3)
Loam	—	Some of the alvars have areas of deeper loam soils
Organic	—	Westplain Mud Lake Cameron Creek Swamp Harrowsmith Bog
Site District 6-10 Site district is shared with Tweed, Carleton Place and Brockwille Districts. Murphys Point and Charleston Lake Provincial Parks in Carleton Place and Brockville Districts respectively provide additional representation		
Rock	Frontenac	—
Sand	Frontenac (1)	—
Loam	Frontenac	—
Organic	Frontenac	Rock Lake (Hebert) Fen
Site District 6-13 The site district lies largely within the Lindsay District. To date, no sites have been identified within Napanee District which are considered to be provincially significant.		

FIGURE 2 continued

Site District and Soil Material	Representation in Existing Parks	Other Sites
Site District 6-15		
Rock	Lake on the Mountain (1) Presqu'ile	Scotch Bonnet Island Timber Island (4) Yorkshire Island (5) Prince Edward Point (5) Beauvais Point Pigeon Island McMahon Bluff
Sand	Presqu'ile Sandbanks North Beach (1)	Big Sandy Bay Amherst Bay dunes and marshes Bald Head Beach and Island
Loam	Presqu'ile Sandbanks (1)	The Big Swamp Some of the rock sites have patches of deeper loam soils
Clay	—	Some potential exists but no sites have been identified to date
Organic	Sandbanks Presqu'ile	Hay Bay Marshes Big Sandy Bay Fish Lake Wetlands (3) Amherst Bay dunes and marshes Lost Lake (Bayview) Bog The Big Swamp

(1) *Poor to fair representation only, nature reserve zones not proposed*
(2) *Poor to fair representation, site selected to represent other substrate(s)*
(3) *Site of special significance*
(4) *Candidate provincial park*
(5) *Canadian Wildlife Service*

Derived from Eastern Region Provincial Parks files.

The report entitled *A Topical Organization of Ontario History* and a subsequent status report prepared by the former Ministry of Culture and Recreation organize Ontario's land-based history into themes, sub-themes and theme segments. Most of these themes are relevant to the Napanee District (figure 3) and all the district's parks contribute in some way to representing historical themes.

The district contains numerous known archaeological sites. These tend to be concentrated in the Bay of Quinte-Prince Edward County area. Several sites occur in Sandbanks Provincial Park but as they have not been excavated their full significance is not known. Sandbanks, Presqu'ile, Frontenac and Ferris Provincial Parks all contain resources associated with the original settlement of the land and the subsequent changes in patterns of land use. Frontenac Provincial Park has several old mine shafts which help to illustrate the south Shield small-scale mining sub-theme.

Other agencies which help to represent historical themes in the district include the St. Lawrence Parks Commission, the conservation authorities and Parks Canada. Local museums and historical societies contribute to interpreting the district's history.

Much more research is needed to locate and evaluate the land-based historical resources which can best be protected within the provincial parks system. It is expected that other agencies, including conservation authorities and Parks Canada, will have a significant role in protecting many of the district's historical resources. No historical class provincial parks are proposed at this time. The Otter Lake to Charleston Lake waterway park proposal could protect selected historical resources if these were acquired but the waterway is more likely to provide access to viewing resources already protected by other agencies and private individuals.

b. Heritage Appreciation

Establishing natural environment, wilderness and waterway provincial parks in site regions and site districts is the principal means of representing the natural and cultural landscapes of Ontario. Opportunities to explore and appreciate these landscapes are then provided through

FIGURE 3 AREAS OF NATURAL AND SCIENTIFIC INTEREST — HISTORICAL RESOURCES REPRESENTATION IN NAPANEE DISTRICT

Theme	Representation in Existing Parks	Other Sites
Early Post-Glacial Immigrants	—	Few scattered sites in the Prince Edward County and Bay of Quinte area
Environmental Frontiersman	—	Picton site McIntyre site Other sites are known
Indigenous Settlers, Traders and Potters	—	A number of sites are known
Indigenous Peoples Farming Societies	Sandbanks (2) Frontenac	Payne site Several other sites are known
Northern Hunters and Fishers	—	Sites are possible on the Shield
Post-Contact Tribes and Bands	Sandbanks (2)	Sulphician mission (site not precisely located) Tyendinaga Indian Reserve
Alienation of the Land	Frontenac Sandbanks (1) Presqu'ile (1) Ferris (1)	Survey patterns are evident in the landscape throughout the district. United Empire Loyalist immigration Tyendinaga Indian Reserve
Early Settlement	Frontenac Sandbanks Ferris (1) Presqu'ile (1) Lake on the Mountain (1)	Fairfield Park (3)
Rural Life	Sandbanks (1) Ferris (1) Frontenac	Local museums Lake Ontario fishing ports and stations (e.g. Prince Edward Point and Duck Islands)
Forest Industry	Sandbanks (1) Frontenac (1)	Trent River logging (square timber to pulp and paper) Garden Island
Mining	Frontenac Sandbanks (1)	Numerus small-scale mines on the Frontenac Axis Scattered pits and quarries
Early Manufacturing	Lake on the Mountain (1) Sandbanks (1)	Numerous manufacturing centres such as Campbellford (near Ferris Park)
Transportation and Integration of Economies and Communities	Presqu'ile (1) Sandbanks (1)	Rideau and Trent waterways (4) Otter Lake-Charleston Lake waterway park proposal (5)
Military	—	Fort Henry (3) Rideau waterway (4)
Recreation and Conservation	Sandbanks Presqu'ile (1) North Beach	Otter Lake-Charleston Lake waterway park proposal (5)

(1) Features in park but not located within an existing or proposed historical zone
(2) Not excavated; full significance not known
(3) St. Lawrence Parks Commission
(4) Parks Canada
(5) Candidate provincial park
Derived from ***A Topical Organization of Ontario History*** *(1972) as revised 1978.*

a variety of self-use facilities and visitor services programs. Where suitable land-bases do not exist for establishing these parks alternative ways of achieving the objective will be investigated. These may include relying upon other agencies or providing facilities and programs on dispersed public lands.

Of the six site districts which enter the Napanee District, 6-10 and 6-15 are adequately represented by natural environment parks. Site district 6-8 has Ferris Provincial Park which is smaller than the recommended minimum size of 2000 hectares (4900 acres). Site districts 6-7, 6-9 and 6-13 are not represented by natural environment class parks. No land-base exists within the Napanee District which would be suitable for establishing a natural environment park in 6-7 and 6-13. Tweed, Lindsay and Napanee Districts are jointly investigating site district 6-9.

It has been determined that it is not possible to establish a wilderness park in site region 6 due to the lack of a large area of public or largely public land. A wilderness zone (minimum size 2000 hectares or 4900 acres) could be established in Frontenac, a natural environment park. This however, would have the effect of preventing certain management practices such as fish stocking, thereby eliminating some of the fishing opportunities in the park. At the present time the ministry does *not* recommend redesignating a large part of Frontenac Provincial Park as a wilderness zone.

There are currently no waterway parks within the Napanee District. Waterway representation of the site districts is achieved in part by the CORTS (Canada-Ontario Rideau, Trent-Severn) federal-provincial agreement and by Parks Canada which operates the Rideau and Trent Canal systems. A 1980 evaluation of waterways in Ontario for provincial park purposes gave a high rating to a route linking Frontenac Provincial Park with Charleston Lake Provincial Park in the Brockville District. The route crosses a portion of the Rideau waterway and could provide excellent representation of site district 6-10. A subsequent, more detailed examination of the route has shown that a park is feasible even with the constraints of a largely privately owned shoreline. The support of the public and of other agencies such as Parks Canada, the Cataraqui Region Conservation Authority and local municipalities will be required before the proposal can go ahead.

The second part of achieving the heritage appreciation objective, that of interpreting the natural and cultural resources of the district, is already well advanced in the existing provincial parks. All parks have self-use facilities such as trails or displays which help the visitor learn about the parks' resources. Sandbanks and Presqu'ile have more ambitious programs which include staff-led activities. At Sandbanks, the dune geomorphology and ecology and local history are emphasized. Major themes at Presqu'ile are marsh ecology, bird migration and the history of Great Lakes shipping. When developed, Frontenac Provincial Park will interpret south Shield geology and ecology, and the historical themes of mining and early settlement. All of this will be done in a semi-wilderness environment which will emphasize a system of trails and canoe routes for gaining access to the park's interpretive resources.

c. Recreation and Tourism

The targets for recreation and tourism are expressed in terms of opportunities to swim, picnic, camp and canoe trip in provincial parks. These activities have been chosen as representative uses because quantifiable facilities are required for them. In setting the targets a number of assumptions were made. It was assumed that provincial parks would continue to provide the same average annual per capita supply of opportunities as they did in 1976, i.e. provincial parks will maintain their share of the market relative to other agencies and the private sector. It was also assumed that the average urban resident would travel for up to two hours in order to picnic or swim and up to three hours to camp overnight in a provincial park. Target achievement for the Napanee District as shown in figure 4 indicates the requirements for swimming, picnicking, camping and back-country (canoe) travel opportunities by the year 2000. The candidate waterway park which extends from Charleston Lake Provincial Park in Brockville District to Frontenac Provincial Park could supply approximately 2,800 opportunities over 25 kilometres (15 miles) of water route within Napanee District. Another 65 kilometres (40 miles) of the waterway extends into Brockville District. No targets have been established for back-country hiking.

Existing facilities in the Napanee District exceed the requirements for back-country travel but fall short of the other targets. Existing park resources, if further developed, could meet the camping target. There are currently 4.6 kilometres (2.9 miles) of underdeveloped Crown

FIGURE 4 RECREATION AND TOURISM TARGETS, EXISTING SUPPLY AND ADDITIONAL REQUIREMENTS — NAPANEE DISTRICT

	Day Use				Extended Use			
	Swimming opportunities	Metres of beach	Picnicking opportunities	Picnic tables	Camping opportunities	Campsites	Back-country opportunities	Kilometres of canoe route
Target (year 2000)	2,177,500	—	1,098,300	—	370,600	—	1,000	—
Existing supply (1980)								
Ferris	0	0	27,165	70	43,680	160	0	0
Frontenac	0	0	7,761	20	0	0	0	0
Lake on the Mountain	0	0	11,642	30	0	0	0	0
North Beach	176,432	2,000	93,139	240	0	0	0	0
Presqu'il	606,537	1,500	271,656	700	109,200	400	0	0
Sandbanks	288,900	2,450	178,516	460	111,930	410	0	0
St. Lawrence Parks Commission	13,685	200	45,017	116	36,855	135	0	0
Total (1)	1,085,554	6,150	634,898	1,636	301,665	1,105	0	0
New opportunities required for year 2000 (rounded figures)	1,091,900	6,200	463,400	1,200	68,900	250	1,000	1,000
Available potential								
Ferris	0	0	7,761	20	30,030	110	0	0
Frontenac (2)	0	0	3,880	10	32,760	120	4,536	40
Presqu'ile	0	0	15.523	40	0	0	0	0
Sandbanks	23,264	200	27,165	70	0	0	0	0
Total (3)	23,264	200	54,331	140	62,790	230	4,536	40
Target Variance (rounded figures)	-1,068,600	-6,000	-409,100	-1,060	-6,110	-20	+3,500	+ 40

(1) *Existing supply figures include facilities operated by the St. Lawrence Parks Commission (Ministry of Tourism and Recreation).*

(2) *Development of the interior travel routes in Frontenac Park is underway and the system should be fully operational by 1983-84.*

(3) *The 25 kilometres of the candidate waterway park within the district could supply an additional 2,800 opportunities for non-wilderness back-country canoe travel.*

Derived from ***Eastern Region Provincial Parks System Plan****, 1981.*

beaches in Prince Edward County. However, these beaches are abutted by private lands. Some 78 percent of the predicted swimming and picnicking opportunities required are for residents of the Toronto area which is near the two hour travel time limit. It will be necessary to monitor day use of Prince Edward County beaches to see the extent to which Toronto area residents are actually attracted by the high quality of the beaches as opposed to substituting other day use recreational opportunities closer to home. There will be no expansion of the existing recreational facilities until it is justified by increased use.

Map 6 shows the location of existing provincial parks and candidate provincial parks, and includes as areas of natural and provincial interest, those earth science, life science and historical resources presently identified.

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4. STRATEGY

a. Protection

- continue to search for sites which adequately represent earth science, life science and historical resources and other areas of natural and scientific interest;
- continue to evaluate the sites already identified for comparison with other sites across the province and to define more specific boundaries, to establish priorities for their protection and to determine the most appropriate protection strategy for each site;
- place Timber Island Wilderness Area in regulation under the *Provincial Parks Act* as a nature reserve class provincial park;
- continue to consult with the Ministry of Citizenship and Culture on matters of historical and archaeological research and planning. Until a comprehensive review and evaluation of historical resources is available, known sites will be flagged for protection through ministry programs;
- seek protection of the most significant sites — Moira Karst, Salmon River Alvar, Camden East Alvar and Fish Lake Wetlands — through negotiation with the present landowners; and
- endeavour to conserve and protect other significant, natural and cultural sites through co-ordinated ministry programs and special

arrangements with other agencies and private individuals.

b. Heritage Appreciation

- retain and operate the four natural environment class provincial parks in the district;
- implement visitor services plans for the district's provincial parks;
- in co-operation with the Brockville District continue to develop a concept for the Otter Lake to Charleston Lake candidate waterway park; and
- in co-operation with Tweed and Lindsay Districts attempt to identify a suitable site for a natural environment class park to represent site district 6-9.

c. Recreation and Tourism

- retain and continue to operate recreational facilities in the existing provincial parks;
- continue to monitor changes in park use and visitor preferences through conducting user surveys;
- develop a swimming facility in Ferris Provincial Park and monitor its use to assess the satisfaction of visitors with inland riverside beaches as compared to the extensive lakeshore beaches offered at Presqu'ile, Sandbanks and North Beach. The results of such monitoring will be useful in planning future swimming and camping facilities in both Napanee and adjacent districts;
- develop additional picnicking facilities in existing provincial parks and on Crown land beaches in the North Beach area if demand warrants; and
- consider the future of Casey Point park reserve. Possible options include transfer or sale to another agency such as Parks Canada or the Cataraqui Region Conservation Authority.

NAPANEE DISTRICT

PROVINCIAL PARKS AND RECREATION

Kilometres 0 5 10 15 20 25
Miles 0 4 8 12 16

LEGEND

■ Existing provincial park

▲ Candidate provincial park

Class

nr	nature reserve
ne	natural environment
wa	waterway
r	recreation

Other

SLPC St. Lawrence Parks Commission

Area of Natural and Scientific Interest

■ Earth science

● Life science

★ Historical/ cultural

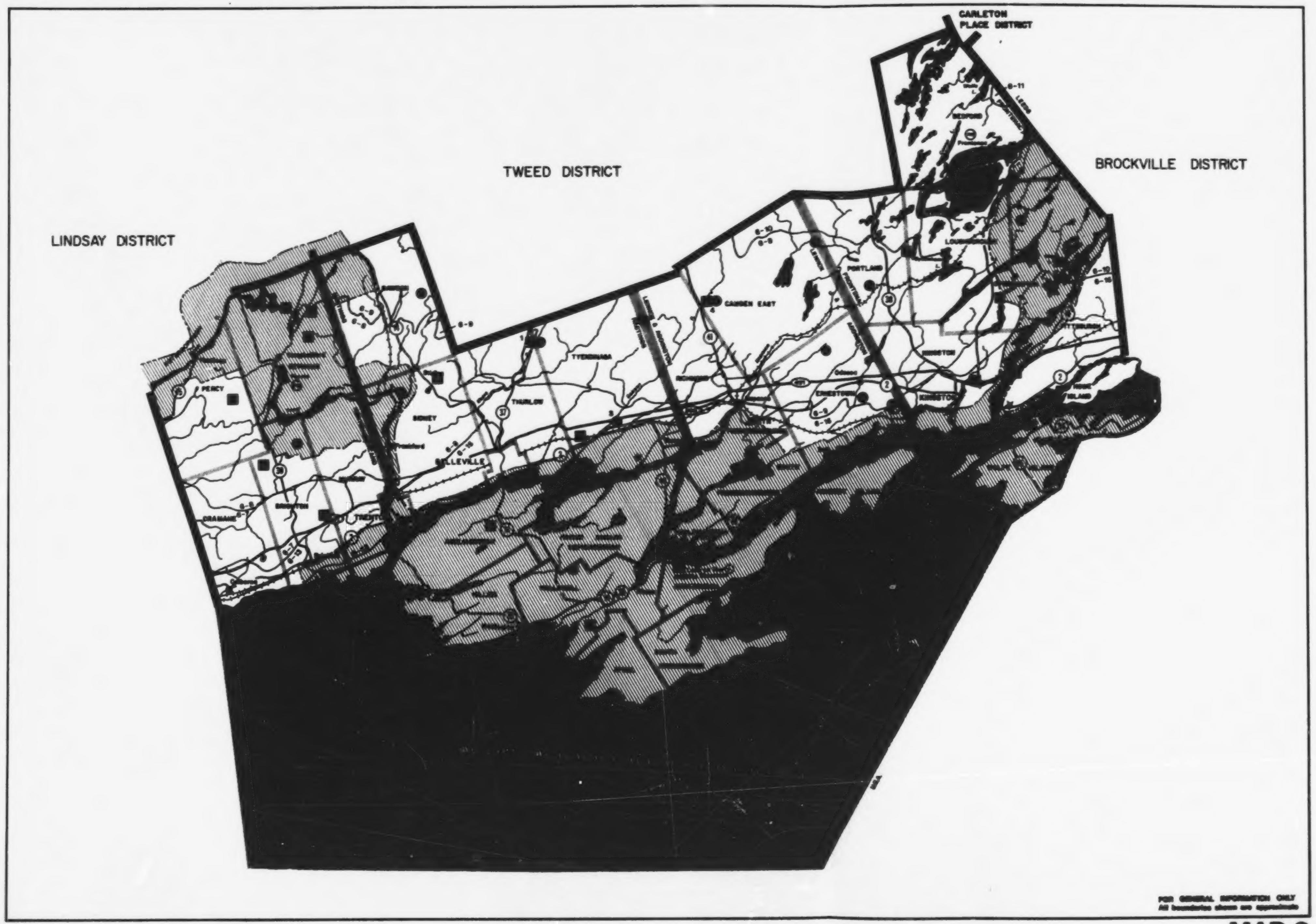
Site of Special Significance

1 Moira Karst
2 Fish Lake Wetlands
3 Salmon River Alvar
4 Camden East Alvar

⁚ Major trail

▭ Site region/ site district boundary

▨ Canada-Ontario Rideau, Trent-Severn Corridor


CARLETON PLACE DISTRICT
TWEED DISTRICT
BROCKVILLE DISTRICT
LINDSAY DISTRICT
BEDFORD
PORTLAND
CAMDEN EAST
TYENDINAGA
THURLOW
SIDNEY
BELLEVILLE
PERCY
BRIGHTON
CRAMAHE
TRENTON
ERNESTOWN
KINGSTON
FOR GENERAL INFORMATION ONLY
All boundaries shown are approximate

MAP 6

G: general recreation

1. OBJECTIVES

The ministry's recreation management efforts are directed primarily to hunting, fishing and provincial parks. There are a number of other recreation related activities of the ministry for which no objectives have been developed.

Tentative objectives for general recreation in southern Ontario are:

- to provide and encourage the provision of a wide variety of recreation opportunities ranging from day use to back-country experiences;
- to identify, select and protect provincially significant natural and cultural resources; and
- to provide an economic contribution through tourism.

2. TARGETS

No targets have been assigned in Napanee District.

3. DISCUSSION

The Lake Ontario shoreline, the St. Lawrence River and inland lakes and rivers in Napanee District are important recreation and tourism resources which contribute to the local economy. It is part of the ministry's objective to provide on Crown land and encourage on private land, a continuous contribution to the economy from tourism and its related industries.

Opportunities for outdoor recreation in areas outside of provincial parks exist on conservation authority lands, municipal and commercial parklands, county forests, private land and undesignated Crown lands and waters. As many of these recreational activities do not require specific facilities, the extent of opportunities available is not known. Furthermore, the actual amount of recreational use of ministry administered public lands is unknown. The more common activities include camping, hiking, boating, picnicking, cross-country skiing and snowmobiling. Map 6 depicts the recreation resources within the Napanee District.

The ministry directly contributes to the achievement of general recreation objectives by providing trails and other recreation facilities on agreement forest lands, wildlife management areas, and other Crown lands. Numerous groups and agencies also contribute to the achievement of these objectives by developing trails and other recreational facilities, and protecting significant natural and cultural resources.

Most parcels of Crown land in Napanee District are available to the public for general recreation activities. However, the opportunity for the ministry to provide recreation facilities on Crown land is limited by the scarcity of Crown land in the district. The major areas are the Camden Lake Wildlife Management Area, the Brighton Provincial Wildlife Area, the Pointe Petre Provincial Wildlife Area and Casey Point park reserve.

The provincial wildlife areas provide opportunities for outdoor activities such as horseback riding, snowmobiling, outdoor education classes and hiking. Overnight camping facilities are not provided. A small (5 hectare or 12 acre) recreational area is maintained by the ministry near the wildlife management area at Point Petre. The site is used by local residents and visitors to picnic, hike and relax; picnicking, parking and toilet facilities are provided.

Casey Point is a relatively small (32 hectares or 80 acres) park reserve located on the west shore of the Cataraqui River just upstream from Kingston Mills. The site was acquired ten years ago and set aside for future development of a park to supply local day use opportunities and accommodation for boaters travelling the Rideau waterway. Because of its size, and the lack of significant natural or recreational resources, and because of recently created day use recreation opportunities at Lemoine Point (operated by the Cataraqui Region Conservation Authority), development of Casey Point as a provincial park is not planned.

There are numerous trails, located primarily on private land, which offer opportunities for outdoor recreation. Two major hiking trails originate within the district. The Rideau Trail extends from Kingston to Ottawa and the Quinte-Hastings Trail begins at Sandbanks Provincial Park and extends north through Hastings County to Maynooth. Approximately 250 kilometres (150 miles) of snowmobile trails and 30 kilometres (20 miles) of cross-country ski trails are managed by private trail clubs for public use.

The ministry often identifies or is informed by other agencies or individuals of sites of local, natural or cultural significance. While these sites may not directly contribute to specific ministry programs, it is recognized that they may be highly valued by local citizens and organizations and may contribute to the quality of life in the community. The Napanee District maintains an information file on these special areas to which it refers during the planning and implementation of ministry programs which might adversely affect the significant features of such sites. This information is available upon request to landowners and other concerned individuals and groups as well as to other agencies such as Ontario Hydro, pipeline companies, local governments and consulting firms. Such individuals and groups are encouraged to conserve and protect these features. The identification and documentation of sites is an ongoing process.

4. STRATEGY

- seek a better understanding of the degree to which the district's Crown lands are currently being used for general recreation;
- review the total outdoor recreation supply available to the public through conservation authorities, municipal lands, commercial campgrounds, county forest lands and private land and assess the need for additional recreational facilities such as water access sites;
- continue to provide information to the public on district outdoor recreation opportunities. Information on canoe routes, ski trails, snowmobile trails, hiking trails and public and private campgrounds will be available at park offices and at the district office;
- continue to identify and document locally and regionally significant natural and cultural sites and to encourage their protection through co-ordinated ministry planning and through making information about them available to landowners, municipal governments and other concerned invidividuals and groups;
- maintain the small picnic area associated with the Point Petre Provincial Wildlife Area and carry out improvements to upgrade the site;
- assist groups and agencies through the granting of permission to develop recreational trails on appropriate public lands. Emphasis will be placed on connecting the trail systems of various clubs to achieve a district trail network with major trunk corridors;
- maintain contact with local trail clubs, and provide advice on the development of facilities by these and other suppliers of general recreation;
- work co-operatively with associations and organizations (such as fishing guides and private campground operators) sharing an interest in recreation and tourism for the benefit of local economies and the general tourism industry;
- extend technical advice to groups and individuals interested in the development of commercial recreational facilities on private lands;
- co-operate with Parks Canada, the Ministry of Citizenship and Culture and conservation authorities in achieving mutual protection, heritage appreciation, recreation and tourism objectives;
- review municipal recreational developments where assistance has been applied for; and
- encourage municipalities to submit all private park development and expansion proposals to the district for review by staff specialists so that the ministry can comment on their design for maximum recreational and tourism benefit.

H: land administration

1. OBJECTIVE

The objective for land administration in southern Ontario is to facilitate the orderly development and conservation of Ontario's land and water resources.

2. TARGETS

Specific land administration targets have not been developed for the Napanee District. To a very great extent, this administrative activity operates to serve other Ministry of Natural Resources programs and the needs of other agencies.

3. DISCUSSION

The ministry has custodianship responsibility for Crown land. This is carried out by authorizing appropriate uses of Crown land through licences, leases and permits, by asserting the Crown's proprietary interest concerning illegal occupation of Crown land, by maintaining up-to-date records of land grants, and by clarifying land claims based upon evidence of long-time occupancy and those by native people.

Where access on Crown land is required for natural resource development and use, roads will be provided and maintained consistent with approved land use plans, resource management plans, work plans and approved operating guidelines.

The ministry also reviews the navigability of water courses and maintains access points where required.

The orderly development of lands and waters will be assisted by a geographical referencing system which will include standards, Ontario Basic Maps and surveys.

4. STRATEGY

- maintain the Crown's proprietary interest in land;
- develop and maintain access roads on Crown land essential to resource development and use;
- administer and manage public lands and waters to contribute to the achievement of ministry and other government objectives. This may require, from time to time, acquisition, interim property management, disposition and regulation of unauthorized occupations. The district will inventory all shoreline to identify those occupations which are unauthorized; and
- dispose of Crown land considering the availability of suitable private land, the potential competition with the sale of private land, the potential impact on adjacent use and the policies and designations of land use in municipal official plans.

IV GENERAL RESOURCE AREAS

The general resource area boundaries of the Napanee District are broadly drawn to reflect both present ministry activities and the capability of the land base to support particular uses.

Each area is described in terms of present use and development, significant features and known problems and issues related to ministry interests. Strategies for each resource area are stated, which should be read in conjunction with the general and specific policies applying across the district.

The resource areas establish the relative importance of ministry programs in different parts of the district and the strategies provide direction for resource management actions.

All general resource areas, lettered for identification purposes only, are shown on the map in the pocket inside the back cover.

1. AREA A

a. Description

This is a rural, agricultural area with generally rolling topography which is characterized by drumlins, moraines and some eskers. It fronts on Lake Ontario and has some shoreline on the Trent River. Trenton, the major centre, is linked to points east and west by Highway 401.

The area is an important source of mineral aggregate, has high forestry capability and numerous *Woodlands Improvement Act* agreement sites and high value farm woodlots. Also four coldwater migratory trout streams as well as waterfowl staging areas along Lake Ontario (particularly the Presqu'ile area) and several deer winter concentration areas are known. Of the few lakes present, Biddy Lake is the largest. The Codrington Fish Hatchery is located in the area. Presqu'ile Provincial Park and Brighton Provincial Wildlife Area make a substantial contribution to general recreation in the area.

Potential land use conflicts with respect to agriculture, forestry, fisheries, mineral extraction and outdoor recreation will have to be addressed by the ministry in carrying out its programs in this area.

b. Direction for Ministry Activities and Development

(i) General intent The primary uses which the ministry will seek to encourage are planned mineral extraction, forestry production, general recreation and management of coldwater streams for both trout production and sport fishing. Attempts will be made to resolve land use conflicts in order to help achieve district forestry, mineral aggregate, recreation, and fisheries and wildlife targets in this portion of the district.

(ii) Strategies

- conduct further geological mapping throughout the area as a basis for identifying aggregate reserves for discussion with municipalities;
- actively encourage private land forestry programs in this area to the benefit of forestry, wildlife and recreation concerns. This area has the potential to contribute 20 percent of the forestry target;
- manage Presqu'ile Provincial Park in accordance with defined park management practices and a master plan when approved; and
- encourage private landowners to provide public access along stream corridors for sport fishing.

2. AREA B

a. Description

This is a rural agricultural area which is generally rolling in the west end, but becomes flatter towards the east. The southern boundary fronts on the Bay of Quinte. The area is transected by parts of the Moira and Crowe Rivers and by the Trent River which has provincial significance as part of the CORTS recreational boating corridor. The Trent is also noteworthy as a major walleye and maskinonge fishery. Considerable aggregate reserves remain in eskers throughout the area. Belleville is the major centre and is linked to nearby Kingston and Trenton by Highway 401.

Since the area potentially contributes about 35 percent towards the district forestry target, the private land forestry program is very significant. Numerous *Woodlands Improvement Act* agreement sites and high value farm woodlots are present. Coldwater trout streams are important to targets since they contribute about 75 percent of the potential production from streams. Murray Marsh, a wetland area of regional significance, is important to wildlife targets for deer, waterfowl, upland game and fur-bearers. Ferris Provincial Park, near Campbellford, is managed as a natural environment park. Also noteworthy is the Moira Karst, an area of natural and scientific interest known for its complex system of caves.

In carrying out ministry programs in this area attention must be given to potential land use conflicts with respect to agriculture, forestry, coldwater fisheries, mineral extraction and outdoor recreation features.

b. Direction for Ministry Activities and Development

(i) General intent The primary uses which the ministry will encourage are forestry, planned mineral extraction, general recreation, management of coldwater streams for trout production and recreation and management of the warmwater fishery (walleye and maskinonge) in the Trent River. Attempts will be made to resolve land use conflicts in order to help achieve forestry, mineral aggregate, recreation, and fisheries and wildlife targets in this portion of the district.

(ii) Strategies

- encourage private land forestry programs in this area to the benefit of forestry, wildlife and recreation concerns;
- conduct further geological mapping throughout the area as a basis for identifying aggregate reserves for discussion with municipalities;
- attempt to protect wetland areas and deer concentration areas by providing advice to private landowners on the benefits of managing small game, deer and fur-bearers;
- continue to manage Murray Marsh in accordance with defined wildlife management practices and a plan to be prepared for the area;
- continue to manage Ferris Provincial Park in accordance with defined parks management practices and a master plan when approved;
- determine the most appropriate means of protection for the provincially significant Moira Karst site; and
- encourage private landowners to provide public access along stream corridors for sport fishing.

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3. AREA C

a. Description

This is primarily a rural agricultural area with shoreline frontage on the Bay of Quinte. Part of the Crowe, Moira, Salmon, Napanee and Cataraqui Rivers transect the area. Major centres are Napanee and Kingston which are linked by Highway 401.

Special features include the Cameron Creek Swamp, Salmon River and Camden East Alvars, a variety of bogs and the Holleford Crater. Cottaging occurs on the inland lakes which are in the eastern end of the area and along parts of Lake Ontario. The Bay of Quinte shoreline is an important fish spawning and nursery habitat. Fur-bearer and waterfowl production is high in many wetlands (e.g. Hay Bay, Cameron Creek Swamp, Varty Lake, Camden Lake). The area also is of fair importance to the forestry program but less so than Areas A and B. Aggregate extraction is concentrated in the Kingston area. Paleozoic and Quaternary deposits have not been sufficiently inventoried or mapped to permit adequate assessment.

Potential land use conflicts in this area with respect to forestry, agriculture, fisheries, mineral extraction and outdoor recreation features must be addressed if ministry targets are to be achieved.

b. Direction for Ministry Activities and Development

(i) General intent The primary uses which the ministry will encourage are the protection of wetlands and significant earth and life science features in the area, forestry production (although in a less intensive manner than in Areas A and B), and mineral aggregate extraction in the southeast portion of the area.

(ii) Strategies

- attempt to protect wetland areas and deer concentration areas by providing advice to private landowners on the benefits of managing small game, deer and fur-bearers;
- investigate means of protecting the Salmon River and Camden East Alvars with the assistance of the landowners;
- carry out the private land forestry program on a demand basis; and
- conduct further geological mapping throughout the area as a basis for identifying aggregate reserves for discussion with municipalities.

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4. AREA D

a. Description

This area is dominated by the Frontenac Axis and accordingly is characterized by rock outcroppings, shallow soils and numerous lakes. It is primarily a rural area with marginal farm operations where pockets of better soil occur.

The Cataraqui River and the CORTS recreational boating corridor as well as Highway 401 tranverse the area. It fronts on the St. Lawrence River along the southern boundary of Pittsburgh Township.

Cottaging and water related recreation are important activities in this area because of the many lakes and close proximity to urban centres. Other forms of outdoor recreation also are important in this area. There are several lake trout lakes which are being subjected to excessive fishing pressure and some development pressure. Frontenac Provincial Park is a natural environment park which offers a threshold-wilderness experience to users. The Rock Lake (Hebert) Fen is an example of a pristine intermediate fen. Much of the area is classed as protection forest. *Woodlands Improvement Act* agreement sites are scattered throughout the southern part (particularly in Pittsburgh Township). Aggregate extraction also occurs mainly in the southern portion of the area and in a limited fashion in the rest of the area. Although mining of metallic minerals has occurred in the northern portion, no mining is currently being carried out.

The main issues in the area include dredging, filling, other shoreline alterations, and water level fluctuations which may destroy the spawning and nursery habitat of warmwater fish species. Other problems are an increasing demand for fuelwood on Crown lands (some of which are remote) in conjunction with problems of access to those lands, the incomplete inventory and mapping of the area's aggregate resource with respect to surficial deposits and the presence of restrictive policies at Frontenac Provincial Park to maintain the perception of "threshold-wilderness". Lack of public awareness of the significance of earth and life science features needs to be addressed.

b. Direction for Ministry Activities and Development

(i) General intent The primary uses which the ministry will seek to encourage include general outdoor recreation and park use, fish and wildlife activities and wood production. The development of Frontenac Provincial Park will proceed in accordance with the master plan. Planning of the Otter Lake to Charleston Lake waterway park candidate will continue and protective measures for the Rock Lake (Hebert) Fen will be determined. Fish spawning sites, including shoals used by lake trout and wetland areas, will be protected from the adverse effects of development. Other existing habitat will be maintained and efforts will be made to rehabilitate degraded habitat. Requests for *Woodlands Improvement Act* agreements will be met to help ensure wood production.

(ii) Strategies

- control the exploitation of lake trout fisheries within biological limits by restricting certain fishing methods and reducing creel limits without any further reduction in season length. The attention of anglers also will be directed to expanded opportunities for other coldwater species within the district, i.e. splake and brown trout;
- consider the introduction of alternative coldwater species more suited to habitat condition e.g. splake;
- rehabilitate degraded spawning sites;
- continue to encourage the expansion of beaver harvests;
- develop and manage Frontenac Provincial Park in accordance with its master plan;
- continue field research and planning for the Otter Lake to Charleston Lake waterway park candidate in co-operation with Brockville District. In the interim compatible uses of the water route will be encouraged;
- determine protective measures for the Rock Lake (Hebert) Fen;
- continue to act upon private land forestry programs on a demand basis since this area has the potential to contribute about 10 percent to the district forestry target;

- develop access roads for the provision of fuelwood in suitable areas of Crown land; and
- conduct further geological mapping throughout the area as a basis for identifying aggregate reserves for discussion with municipalities.

5. AREA E

a. Description

This area consists of Prince Edward County, Amherst Island, Wolfe Island, Howe Island plus all other small islands within the Lake Ontario and St. Lawrence River portion of the district.

All of the area but Howe Island is included in the CORTS recreational boating corridor. This rural area is used extensively for agriculture and recreation. Recreational features administered by the ministry include Sandbanks Provincial Park and Point Petre Provincial Wildlife Area. Two of the islands (Timber Island and Snake Island) located within Area E are designated as wilderness areas under the *Wilderness Areas Act*. Fish Lake Wetlands is a flooded swamp forest complex which is a highly significant natural area. Wetlands and offshore areas are important for waterfowl hunting and viewing. The deer population is capable of supporting a restricted deer season which would provide increased hunting opportunities; several deer concentration areas are known in Prince Edward County. Numerous *Woodlands Improvement Act* agreement sites and some valuable farm woodlots are scattered throughout the area. The only significant mineral extraction areas are southwest of Picton in Hallowell Township and east of Picton in Sophiasburgh Township.

The main issues confronting the ministry include potential land use conflicts with respect to outdoor recreation opportunities, fisheries, wetlands, agriculture, forestry and mineral extraction.

b. Direction for Ministry Activities and Development

(i) General intent The primary uses which the ministry will encourage are the provision of outdoor recreation opportunities through provincial parks, fisheries and wildlife production and forest production on a demand basis.

(ii) Strategies

- manage Sandbanks Provincial Park in accordance with its master plan;
- manage North Beach Provincial Park and Lake on the Mountain Provincial Park in accordance with park management practices and prepare a master plan for each park in order to guide future management;
- place Timber Island Wilderness Area in regulation under the *Provincial Parks Act* as a nature reserve class provincial park;
- determine the most appropriate means of protection for the Fish Lake Wetlands site;
- encourage the protection and management of high quality wetlands critical to the habitat of particular species such as deer, waterfowl and fur-bearers;
- encourage support for opening deer seasons in areas that are now closed to hunting and yet have an abundance of game;
- carry out private land forestry programs on a demand basis. This area has the potential to contribute 15 percent of the district forestry target;
- conduct further geological mapping throughout the area to identify aggregate reserves for discussion with municipalities; and
- continue to manage Point Petre Provincial Wildlife Area to provide wildlife recreational opportunities including viewing and hunting.

6. AREA F

a. Description

The area includes all of Lake Ontario and the St. Lawrence River within the district. It is known for commercial and sport fishing, boating, waterfowl hunting and viewing. The present warmwater fishery in the Bay of Quinte and St. Lawrence River meets approximately 50 percent of the sport fishing target. Most of the waterfowl hunting and viewing in the district takes place in this area. The main issue relates to retaining a viable commercial fishery while rehabilitating species essential to target achievement i.e. lake trout, whitefish, walleye and lake herring.

b. Direction for Ministry Activities and Development

(i) General intent The ministry's aims are to improve fish communities through rehabilitation efforts directed at lake trout, walleye, whitefish and lake herring, to restrict harvests of both commercial and sport fisheries to biologically acceptable limits, and to maintain fur production and waterfowl hunting opportunities. Most commercial fishing targets in the district will be met in this area.

(ii) Strategies

- continue rehabilitation efforts directed at lake trout, walleye, whitefish and lake herring;
- protect sensitive habitat such as wetlands and fish spawning areas through the plan input and review process;
- continue stocking lake trout as a rehabilitative measure;
- introduce brown trout to Lake Ontario as a potential sport fishery; and
- encourage the commercial harvest of coarse fish species by providing liberal seasons and harvest techniques.

V APPLICATION

Application of the *Napanee District Land Use Guidelines* will be accomplished through regular programs and activities of the ministry such as:

- input to, and review of, municipal official plans, zoning by-laws, plans of subdivision, consent applications and zoning orders under the *Planning Act*;
- review of specific development proposals by other proponents on both Crown and private land;
- use of specific conditions in permits, licences, leases and easements issued under the authority of provincial legislation, (e.g. *Public Lands Act, Lakes and Rivers Improvement Act, Crown Timber Act*);
- liaison and co-operation with other government ministries and agencies such as conservation authorities; and
- education and extension programs with private landowners and municipalities.

All resource management plans must have due regard for the intent of the *Land Use Guidelines*. Audits of district and regional programs will be done to ensure the intent of the document is being met.

This document has no legal status. The control of land use on private land in municipalities is exercised by municipalities or the Minister of Municipal Affairs and Housing under the authority of the *Planning Act*.

The ministry recognizes that private landowners, other government agencies, municipalities, conservation authorities and interest groups are key partners in any effort to achieve effective and integrated resource management. The Ministry of Natural Resources will continue to work with these groups, especially with municipalities, through the ministry's plan input and review program to ensure that resource values are considered in local planning documents.

Private land in organized municipalities constitutes 96 percent of the land base in Napanee District. For these lands it is essential to achieve integration between ministry intentions for land use and the plans of the municipalities.

The *Napanee District Land Use Guidelines* may serve as a source of information for ministry involvement in municipal planning. The ministry will consult with municipal officials and private landowners where the *Land Use Guidelines* indicates the ministry wishes to influence particular land uses on private land in organized municipalities. At this time the needs of other land users will be taken into consideration.

There will be occasions when the ministry feels that certain land uses or proposed developments on private land, while in conformity with municipal planning documents, will have a negative impact on ministry programs or interests. In such situations the ministry will attempt to resolve the situation through discussions with the proponent, the municipality and the Ministry of Municipal Affairs and Housing.

In municipalities containing Crown land there may be situations where municipal planning documents do not permit land uses on Crown land indicated as preferred in the *Land Use Guidelines*. Where this happens, and it appears that a possible land use conflict might arise, the ministry will consider taking further action under the procedures provided for by the *Planning Act*.

Conservation authorities are independent corporate agencies set up jointly, under the *Conservation Authorities Act*, by the local municipalities and the Province of Ontario to develop and implement water related land management programs. The *Act* is administered on behalf of the Province of Ontario by the Ministry of Natural Resources.

Conservation authorities are presently completing watershed plans that will outline the long-term direction of their programs. The primary program of conservation authorities in flood and erosion control complements the ministry's programs. Other conservation authority programs, particularly those in forestry, fish, wildlife and recreation supplement the efforts of the ministry. Both agencies are making every effort to reduce duplication and overlap in their planning and ensure that the delivery of resource management programs achieves the greatest possible benefits to the people of Ontario.

In the Napanee District there is a close working relationship with conservation authorities. Contacts occur at the staff level and between senior ministry personnel in the district and executive members of authorities. Conservation authorities are often better able than the ministry to influence some types of land use and natural resource decisions in the municipalities and the private sector.

Co-operation with other agencies in the Napanee District involves the St. Lawrence Parks Commission, Ontario Hydro, the Canadian Wildlife Service, Ducks Unlimited (Canada) and the provincial ministries of Agriculture and Food, Citizenship and Culture, Energy, Environment, Municipal Affairs and Housing, Tourism and Recreation, and Transportation and Communications. Contacts with other agencies may occur as the need arises.

The need for a co-operative working relationship is particularly important with respect to the recreational resources of the Rideau, Trent-Severn Corridor and the program activities of the provincial ministries of Agriculture and Food and Environment.

The governments of Canada and Ontario have approved a set of policies relating to the planning, development and management of one of Canada's prime recreational resources — the Rideau, Trent-Severn Corridor. The implementation and the attainment of the Canada-Ontario Rideau, Trent-Severn (CORTS) objectives is only possible through the co-operation of all interests in the corridor. The Ministry of Natural Resources is an active member of the CORTS Agreement Board and will be the lead ministry in implementing many of the approved policies. For other policies, it will provide support to agencies having lead responsibility. For the portion of the corridor located in the Napanee District, the *Land Use Guidelines* proposes land use activities which comply with the CORTS policies. The review of other plans and development proposals within the corridor will consider the degree to which they support the approved CORTS policies.

The ministry recognizes the importance of agriculture. On private land, the ministry normally will not encourage or support activities or land uses which result in a long-term loss of the amount of land in agricultural production. The ministry will encourage forestry, recreation and other compatible uses on high capability land presently not in agricultural production. Generally, on public land the ministry will maintain high capability agricultural land, or other sites as identified by the Ministry of Agriculture and Food, in uses which do not preclude the long-term use of these lands for agriculture should agricultural use become necessary or desirable.

The Ministry of Natural Resources will work closely with the Ministry of the Environment in meeting the requirements of the *Environmental Assessment Act* and in monitoring impacts on the environment related to natural resources. The two ministries have jointly developed guidelines related to water quality and fisheries issues. The Ministry of Natural Resources has responsibility for identifying the fisheries values of a waterbody with respect to meeting Ontario's fisheries mandate. This identification is based on the *Land Use Guidelines* and, as developed, local fisheries management plans. The Ministry of the Environment is responsible for determining existing water quality and predicting the effects of proposed development on water quality. The latter information is used by the two ministries to assess potential effects on fisheries values.

APPENDIX

A: highlights of public consultation

Public consultation in the preparation of the *Napanee District Land Use Guidelines* began with land use planning displays in shopping centres during November and December 1980. These were followed by the distribution of a *Background Information* report in January 1981. The public was invited to comment on the accuracy of the ministry's information and to provide any additional knowledge they had of the planning area and raise any problems or issues they felt should be addressed during the process.

The district public participation effort was directed towards those groups and individuals with an interest or concern for the long-term use of natural resources such as government agencies, municipalities, conservation authorities, special interest groups, the tourism sector and private individuals.

In July 1982, a draft *Napanee District Land Use Strategy* was released and in August open houses were held to explain the direction proposed and to invite public comment. Over 300 people attended open houses held in Bayside, Kingston, Napanee and Picton. Over 600 copies of the draft document have been distributed. In addition to receiving many verbal and approximately 160 written comments as a result of the open houses, the ministry held follow-up meetings with some municipalities at their request.

Based on the analysis and evaluation of all the public input received, this document was prepared . The Minister personally reviewed the district summary and analysis of public comment and discussed the proposed *Land Use Guidelines* with the District Manager. In addition the Minister held a series of public forums across the province to hear first-hand the views of interest groups and individuals.

Table 1 indicates the kind and number of contacts which have been made during the public consultation process. Table 2 summarizes the type and number of responses by category of respondents. The information in these tables is complete to November 1, 1982.

Copies of all comments received are available for viewing in the Napanee District office, in the ministry's main office public reading room and in the Legislative Library at Queen's Park, Toronto.

TABLE 1 SUMMARY OF CONTACTS

Background Information Open Houses (Shopping Centre Display)		3
Total Background Open House Attendance		150
Draft Strategy Open Houses		4
Draft Strategy Open House Attendance		
	Bayside	52
	Kingston	128
	Napanee	33
	Picton	91
Comment Sheets Distributed		304
Draft Strategies Distributed		620
Telephone Calls Received - (to request copies of draft document)		20 +
- (to make comments)		3
Speeches Made		nil
Meetings with Municipalities		2
Meetings with Conservation Authorities		6
Meetings with Other Agencies (agencies were invited to Open Houses)		nil
Meetings with Interest Groups		1
Interviews with Media — (CKWS TV, CKLC Radio, Napanee Beaver)		3

TABLE 2 SUMMARY OF RESPONSES

Category of Respondent Response Documentation	Individual	Conservation Authority	Government Agency	M.P.P.	Municipality	Interest Group	Industry	Category Unknown	Total All Categories
Background Open House Comment Sheet	Comment sheets not provided in December 1980 but records of conversations kept. These were mostly in form of requests by public for more information.								n/a
Background Open House Record of Conversation	38	(mostly requests for more information)							38
Draft Strategy Open House Comment Sheet	32							2	34
Draft Strategy Open House Record of Conversation	1								1
Mailed Coment Sheet	54							6	60
Letter/Brief	26	1	3	1	5	8	3		47
Record of Conversation other than at Open House	4								4
Late Comments	11	2	1		2	1	1	1	19
Total	166	3	4	1	7	9	4	9	203

GLOSSARY

Candidate Park
An area designated in Ministry of Natural Resources land use guidelines which may be given official status as a park at some time in the future.

Capability
The natural ability of an area to provide continuous opportunity for benefits under an assumed level of management.

Capacity
The upper limit to which an area of land or water may be used or developed without an undesirable change taking place in the environment. Also called carrying capacity.

Crown Land
All land (including land under water) held by the province, both land which has never been sold and land which has been reacquired.

Geological Environment
A discrete period of time characterized by distinctive geological and geomorphological processes, climatic conditions and plant and animal life or its absence which is represented by identifiable features on or below the earth's surface.

Goal
A general purpose to which the ministry aspires.

Historical Theme
A common activity or procedure involving a substantial portion of the contemporary population within a defined time span and geographic area.

Integrated Resource Management
The co-ordination of resource management programs to ensure that conflicts are minimized and that management which would benefit several programs is encourged. Integrated management encourages multiple use, but recognizes that in some circumstances management of areas for a single purpose may be necessary.

Land Use Guidelines
A document which displays direction concerning the use of land and water in a defined area. It identifies where and how the ministry intends to achieve its objectives in a specific district through the use of Crown land and through influencing the use of private land.

Land Use Planning
A process which culminates in a direction regarding the use of land.

Management
The judicious use of means to achieve ends. Management may have various levels of intensity.

Multiple Use
A resource management or planning concept applied to very large areas to indicate that all basic uses are accommodated. Typically, two or more uses may occur on the same general area at the same time or in sequence.

Objective
A quantifiable end result to be achieved.

Occasion
A measure of recreational use describing the number of times a recreation resource or facility is used by individuals in a given time period. An occasion is considered not to exceed one day in duration.

Operational Plan
A part of a resource management plan stating the extent (includes human and financial resources) of all work of any nature to be carried out during one or more years of the management period.

Opportunity
A measure of recreation supply describing the number of times a recreation resource or facility can be used (occasions of use) in a given time period. An opportunity is considered not to be greater than one day.

Policy
A decision concerning the objectives to be achieved and the means of achieving them.

Program
An activity undertaken by the ministry to provide a service or manage a particular resource.

Public Land
Any land owned or administered by a public body or agency. It includes federal, provincial and municipally-owned lands and lands held by agencies such as parks commissions and conservation authorities.

Resource
Any commodity that meets a need.

Resource Management
The control and co-ordination of the use of resources to achieve specific ends. Commonly applied in particular to natural resources.

Resource Management Plan
A plan by which the policies, objectives and targets usually of an individual program (except in the case of an integrated resource management plan) are implemented for a specific resource.

Sequential Use
Where one use is followed by another in planned sequence.

Site District
A fairly large subdivision of a site region set apart from other areas because of a characteristic pattern of landform features.

Site Region
An area of land within which the response of vegetation to the features of landforms follows a consistent pattern.

Site Type
A lower order subdivision of a site region based on the interaction of microclimate, substrate and moisture regime. A characteristic association of plant species will develop on an individual site type within a specific site region. The number of site types also varies from site region to site region.

Strategy
Planned actions or measures to achieve a desired end.

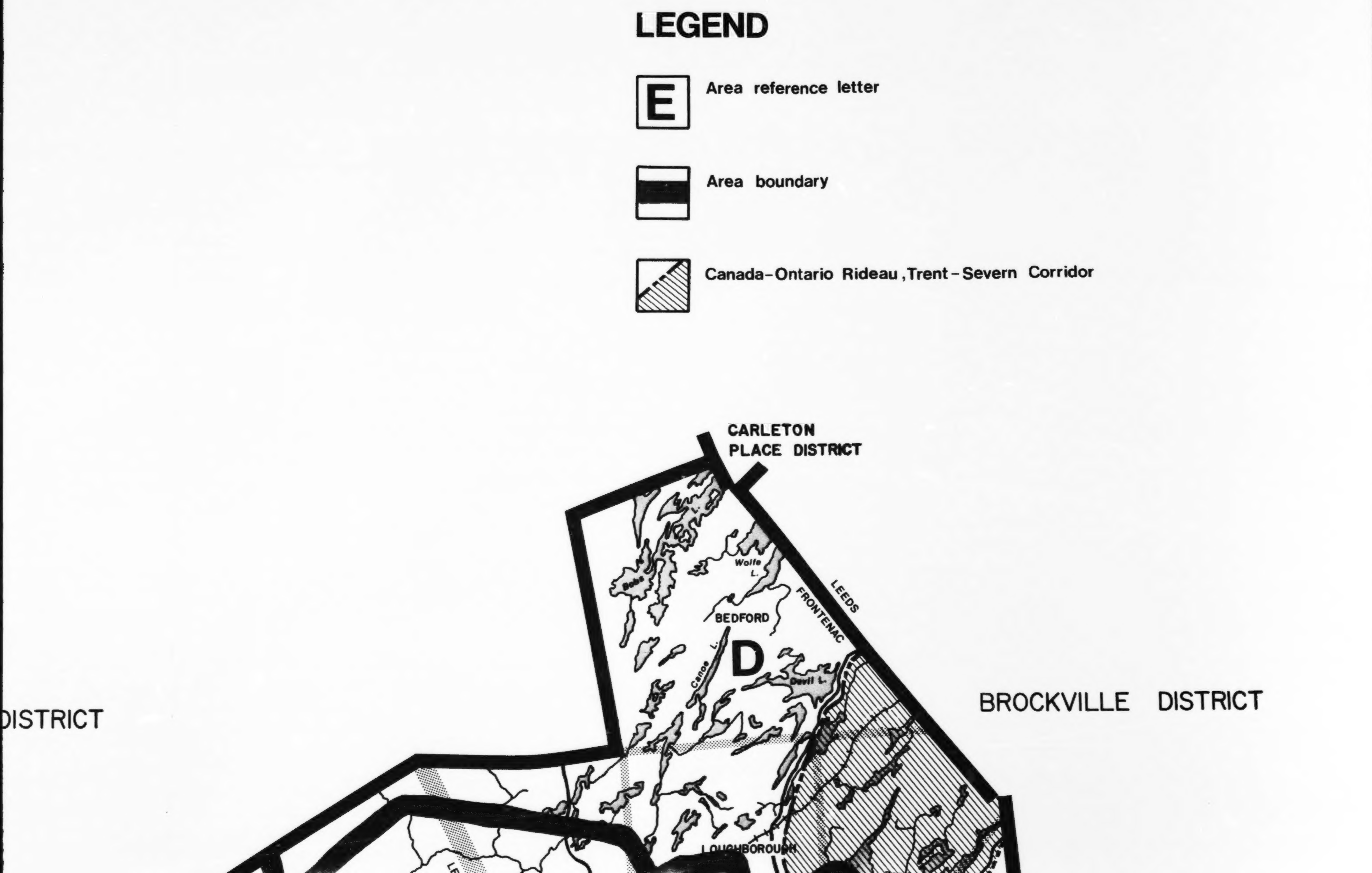
Target
A quantified end to be achieved or completed by a specific date.

Work Plan
A plan prepared annually which defines what management activities are to be undertaken for that year.

NAPANEE DISTRICT
1983

GENERAL RESOURCE AREAS

TWEED DISTRICT
LINDSAY DISTRICT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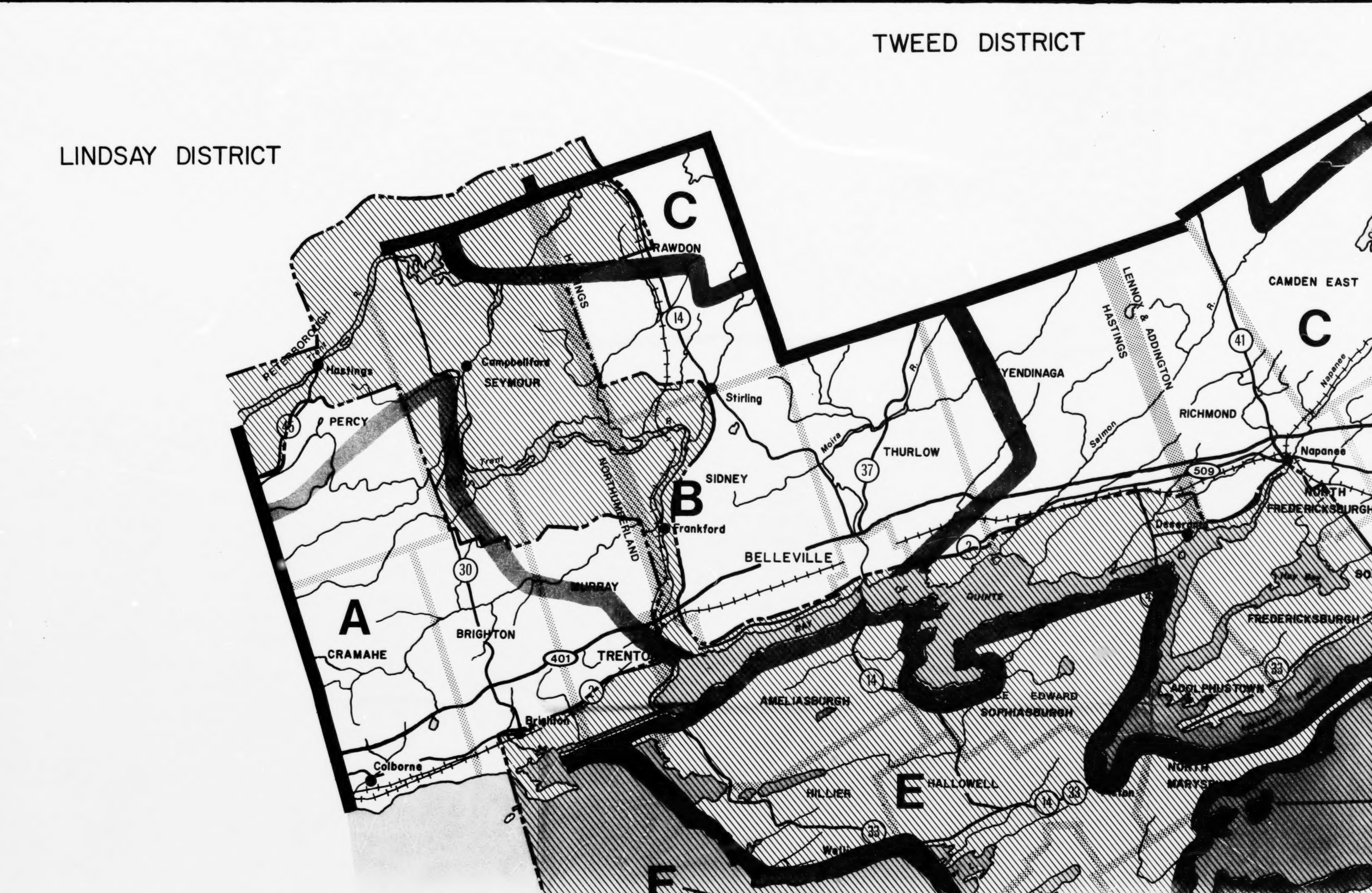
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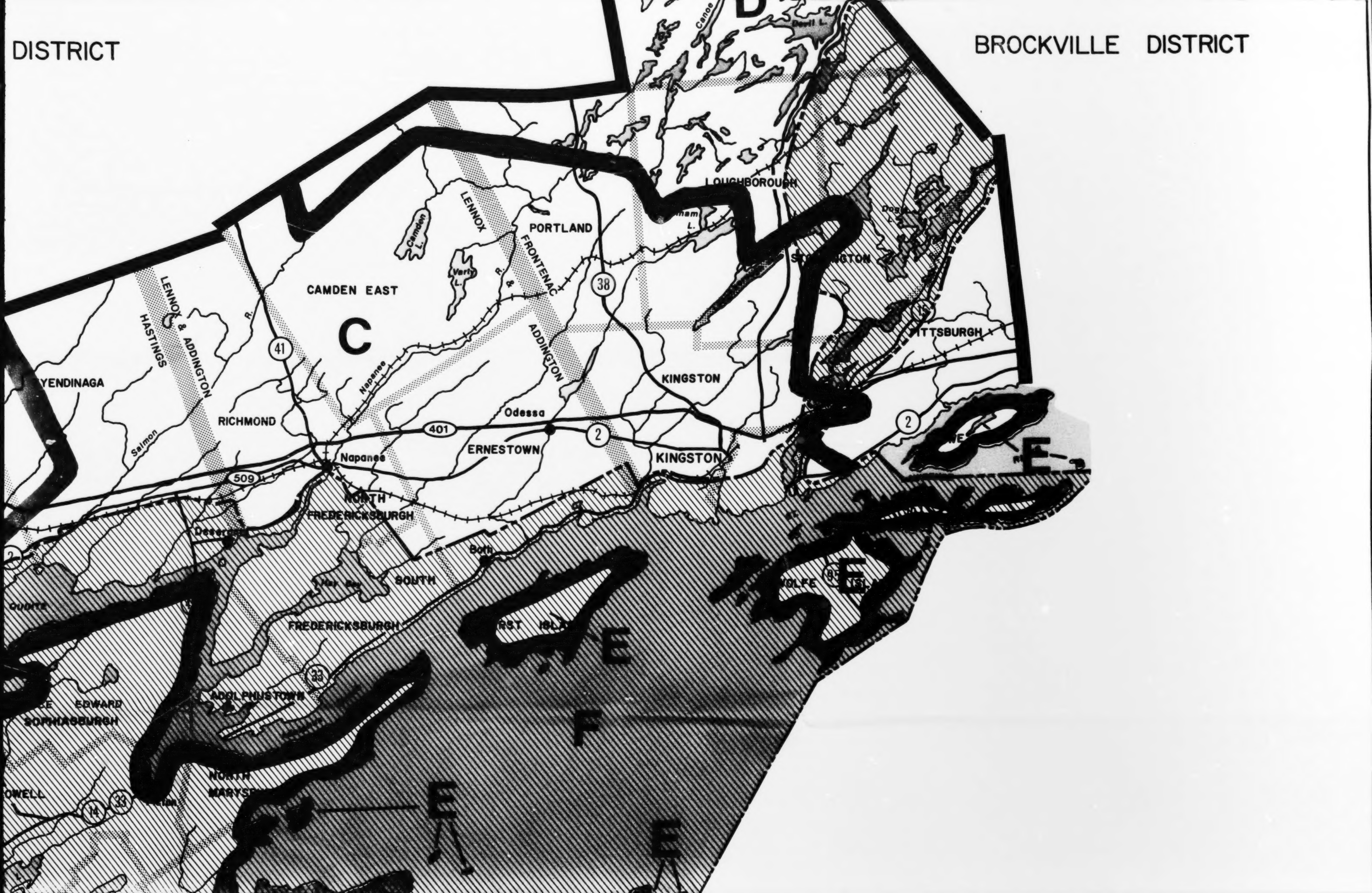

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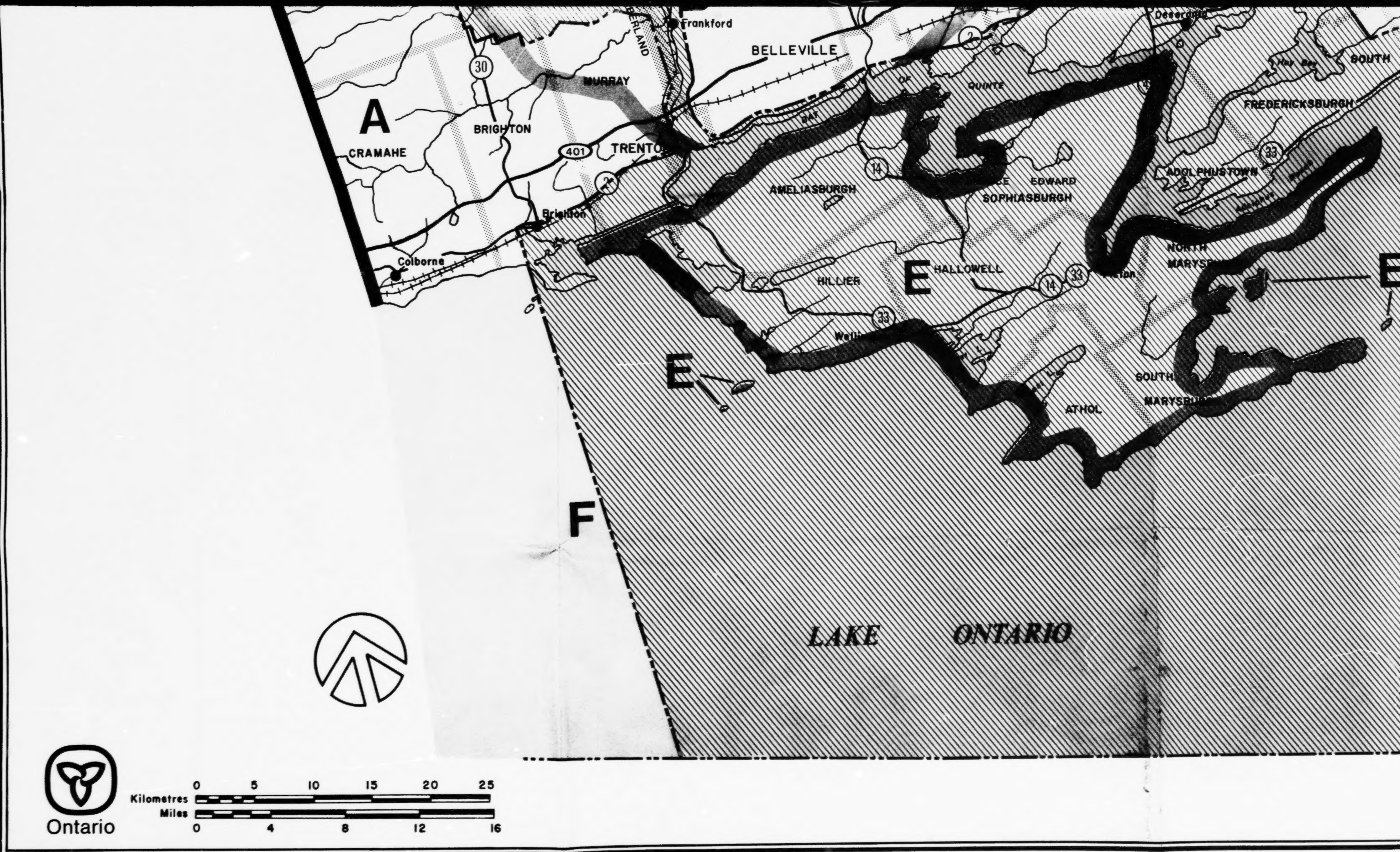
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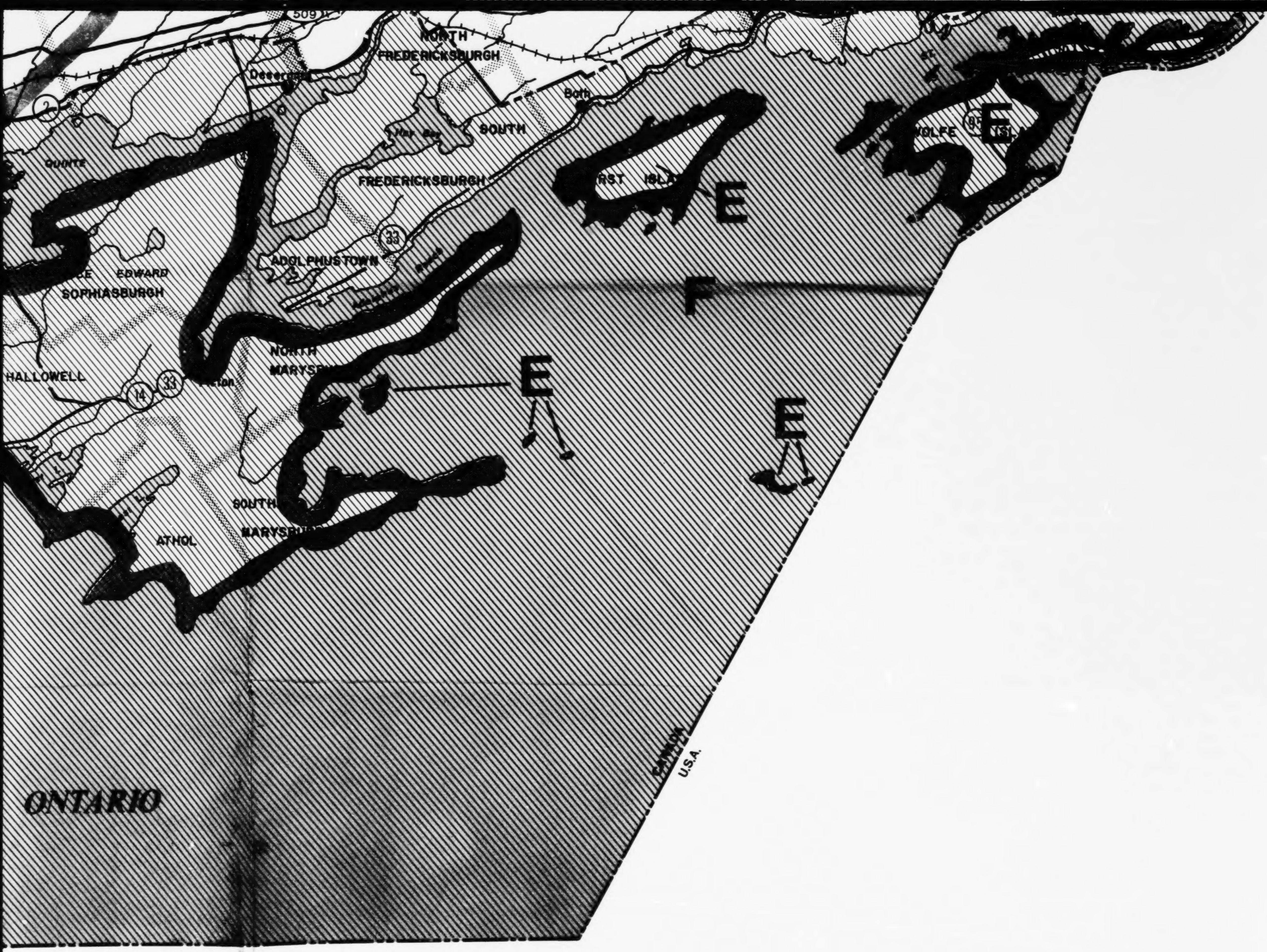
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ONTARIO
CANADA
U.S.A.

POOR

QUALITY

ORIGINAL